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THREE ESSAYS ON STRATEGIC LEADERS AND CORPORATE SUSTAINABILITY/ TRES ENSAYOS SOBRE LÍDERES ESTRATÉGICOS Y SOSTENIBILIDAD CORPORATIVA

ZHAOYI YAN

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Doctoral Thesis Advisor: Rocio Bonet

ABSTRACT

This dissertation consists of three empirical essays on strategic leaders and corporate sustainability. Through three cumulative studies, the dissertation explores the following questions: (1) How are female and racial minority Chief Executive Officers (CEOs) influenced by institutional pressures to advance contested diversity policies? (2) How does a CEO's cultural heritage, and under which circumstances, influence corporate sustainability performance? (3) How does the presence of a Chief Sustainability Officer (CSO) affect firms' resource allocation toward competitive investments?

In the first essay, drawing upon upper echelons theory, status perspectives on minority leadership, and institutional theory, I hypothesize that firms led by female CEOs or racial minority CEOs are more likely than those led by white male counterparts to overconform to institutional pressures regarding the promotion of comprehensive transgender-inclusive healthcare benefits. My results indicate that female CEOs tend to overconform to institutional pressures, aligning their actions more closely with these expectations than their male counterparts. However, similar patterns are not observed for racial minority CEOs.

In the second essay, drawing upon upper echelons theory and the cultural transmission argument, I argue that CEOs' inherited cultural values—reflected in their uncertainty avoidance—shape sustainability preferences and influence corporate social and environmental performance. Furthermore, I posit two boundary conditions: first, that CEO bonuses strengthen the relationship between CEO uncertainty avoidance and corporate sustainability performance, and second, that newly appointed CEOs weaken this relationship. My results reveal that CEOs from cultural backgrounds characterized by high uncertainty avoidance are negatively associated with corporate sustainability performance. Additionally, evidence suggests that the negative association between CEOs' uncertainty avoidance index and corporate sustainability performance is stronger when CEOs receive a higher bonus ratio and weaker when they are newly appointed.

In the third essay, building on upper echelons theory and the literature on functional executives within top management teams, we argue that CSOs serve as key integrators,

transforming interdependencies between social and economic objectives into synergies. Specifically, we examine the relationship between philanthropic donations, R&D expenditures, and advertising expenses in firms with and without a CSO, particularly those with government experience. Results indicate that, on average, the presence of a CSO is associated with a negative relationship between philanthropic donations and strategic investments, with firms reducing expenditures on R&D and advertising when philanthropic donations are present. This effect is significantly stronger when the CSO has a government background.

To test our hypotheses, we primarily employed quantitative methods, leveraging longitudinal datasets rich in information on top executives' traits, cultural origins, career trajectories, corporate philanthropic donations, ESG ratings, and LGBTQ-friendly policies in Corporate America.

RESUMEN

Esta tesis consta de tres ensayos empíricos sobre líderes estratégicos y sostenibilidad corporativa. A través de tres estudios acumulativos, la tesis explora las siguientes preguntas: (1) ¿Cómo influyen las presiones institucionales en las directoras ejecutivas (CEO) para promover políticas de diversidad controvertidas? (2) ¿Cómo influye la herencia cultural de una CEO, y en qué circunstancias, en el rendimiento de la sostenibilidad corporativa? (3) ¿Cómo afecta la presencia de un director de sostenibilidad (CSO) a la asignación de recursos de las empresas hacia inversiones competitivas?

En el primer ensayo, basándome en la teoría de los escalones superiores, las perspectivas de estatus sobre el liderazgo de las minorías y la teoría institucional, planteo la hipótesis de que las empresas dirigidas por directoras generales o por directores generales pertenecientes a minorías raciales son más propensas que las dirigidas por homólogos blancos a sobrecumplir las presiones institucionales en relación con la promoción de prestaciones sanitarias integrales que incluyan a las personas transgénero. Mis resultados indican que las directoras ejecutivas tienden a sobrecumplir las presiones institucionales, alineando sus acciones más estrechamente con estas expectativas que sus homólogos masculinos. Sin embargo, no se observan patrones similares en el caso de los directores ejecutivos de minorías raciales.

En el segundo ensayo, basándome en la teoría de las altas esferas y el argumento de la transmisión cultural, sostengo que los valores culturales heredados de los directores ejecutivos, reflejados en su evitación de la incertidumbre, configuran las preferencias de sostenibilidad e influyen en el desempeño social y medioambiental de las empresas. Además, planteo dos condiciones límite: en primer lugar, que las bonificaciones de los directores ejecutivos refuerzan la relación entre la evitación de la incertidumbre de los directores ejecutivos y el rendimiento de la sostenibilidad corporativa, y en segundo lugar, que los directores ejecutivos recién nombrados debilitan esta relación. Mis resultados revelan que los directores ejecutivos de entornos culturales caracterizados por una alta evitación de la incertidumbre están asociados negativamente con el rendimiento de la sostenibilidad corporativa. Además, las pruebas sugieren que la asociación negativa entre el índice de evitación de la incertidumbre de los directores ejecutivos y el rendimiento de

la sostenibilidad corporativa es más fuerte cuando los directores ejecutivos reciben una ratio de bonificación más alta y más débil cuando son recién nombrados.

En el tercer ensayo, basándonos en la teoría de los escalones superiores y en la literatura sobre ejecutivos funcionales dentro de los equipos de alta dirección, argumentamos que los CSO sirven como integradores clave, transformando las interdependencias entre los objetivos sociales y económicos en sinergias. En concreto, examinamos la relación entre las donaciones filantrópicas, los gastos en I+D y los gastos en publicidad en empresas con y sin CSO, en particular aquellas con experiencia gubernamental. Los resultados indican que, en promedio, la presencia de un CSO está asociada con una relación negativa entre las donaciones filantrópicas y las inversiones estratégicas, y que las empresas reducen los gastos en I+D y publicidad cuando hay donaciones filantrópicas. Este efecto es significativamente más fuerte cuando el CSO tiene experiencia en el gobierno.

Para poner a prueba nuestras hipótesis, empleamos principalmente métodos cuantitativos, aprovechando conjuntos de datos longitudinales ricos en información sobre los rasgos de los altos ejecutivos, los orígenes culturales, las trayectorias profesionales, las donaciones filantrópicas corporativas, las calificaciones ESG y las políticas favorables a la comunidad LGBTQ en las empresas estadounidenses.

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INTRODUCTION

This dissertation comprises three chapters. The first chapter examines how female and racial minority CEOs are influenced by both formal and informal institutional pressures in their efforts to promote socially desirable yet contentious diversity policies. The second chapter explores how informal institutions, such as cultural heritage, shape CEOs' sustainability preferences and investigates the role of CEOs' cultural heritage in relation to corporate sustainability performance. The third chapter addresses how executives can proactively respond to stakeholder pressures to achieve synergies between sustainability objectives and economic goals.

In the first chapter "*Minority Status as a Burden? Demographic Minority CEOs, External Pressures, and Contested Diversity Policy,*" I focus on transgender-inclusive healthcare benefits—a contentious workplace diversity policy—and examines how institutional pressures influence demographic minority CEOs' actions. Through an analysis of Fortune 500 data from 2011 to 2020, the study provides insights into the advocacy efforts of female and racial minority CEOs, particularly regarding transgender-inclusive healthcare benefits. The findings support the theoretical prediction that female CEOs need to overconform to institutional pressures and may align their actions more closely with prevailing external pressures compared to their male counterparts, but this trend is not as evident for racial minority CEOs. More specifically, results show that firms led by female CEOs are more likely than those led by male counterparts to offer comprehensive transgender-inclusive healthcare benefits when they are headquartered in more liberal-leaning states and in cities where there are many benchmarking firms. However, I also observe a negative symmetric effect. When firms with female CEOs are headquartered in more conservative-leaning states and when there are more negative role models in the same industry, female CEOs are even less likely than male CEOs to offer comprehensive transgender-inclusive healthcare benefits. This paper also provides suggestive evidence of the underlying mechanism that drive my findings by exploiting variation regarding the reporting policy of the Human Right Campaign (HRC), suggesting that pressures might have been higher when information was available or highly visible. In general, the present study contributes to institutions

and organizations, strategic leadership, and workplace diversity literature.

The second chapter, titled "*Bound by Origins: CEOs' Cultural Heritage and Corporate Sustainability Performance*," investigates how a previously understudied time-invariant leadership characteristic (i.e., cultural heritage) affects corporate social and environmental performance. Specifically, this chapter focuses on CEOs' uncertainty avoidance orientation (UAI). Drawing upon upper echelons theory and cultural transmission arguments, this study demonstrates that firms led by CEOs with a higher UAI are negatively associated with environmental and social performance compared to others, using a sample of Fortune 500 corporations spanning from 2009 to 2021. The results indicate that the association between CEOs' UAI and corporate sustainability performance is negatively moderated by the CEOs' bonus ratio and positively moderated by newly appointed CEOs. This research highlights how CEOs influence corporate sustainability performance, partly through their distinct cultural values.

In the last chapter, titled "*Balancing on the Ledge: How Chief Sustainability Officers Align Philanthropic Donations and Strategic Investments*," co-authored with Rocio Bonet and Marco Giarratana, we explore the role of Chief Sustainability Officers (CSOs) in managing the interdependencies between philanthropic donations and strategic investments in large U.S. corporations. Specifically, we investigate how the presence of a CSO, particularly one with a public-sector background, influences firms' resource allocation toward competitive investments, including philanthropic donations and strategic investments in R&D and advertising. Analyzing a dataset of 508,624 donations from Fortune 100 corporations between 2005 and 2020, we find a negative association between philanthropic donations and strategic investments in firms with a CSO. This finding suggests that CSOs play a significant role in optimizing resource allocation. Notably, this effect is stronger when the CSO has a government background, highlighting the importance of public-sector experience in leveraging philanthropy to achieve synergies between social and business objectives.

INTRODUCCIÓN

Esta disertación consta de tres capítulos. En el primero se examina cómo las presiones institucionales formales e informales influyen en las directoras generales y en los directores generales pertenecientes a minorías raciales en sus esfuerzos por promover políticas de diversidad socialmente deseables, pero controvertidas. En el segundo se analiza cómo las instituciones informales, como el patrimonio cultural, configuran las preferencias de los directores generales en materia de sostenibilidad y se investiga el papel del patrimonio cultural de los directores generales en relación con el desempeño de las empresas en materia de sostenibilidad. En el tercero se aborda cómo los ejecutivos pueden responder de forma proactiva a las presiones de las partes interesadas para lograr sinergias entre los objetivos de sostenibilidad y los objetivos económicos.

En el primer capítulo, «*¿La condición de minoría como carga? Directores ejecutivos de minorías demográficas, presiones externas y política de diversidad controvertida*», me centro en las prestaciones sanitarias que incluyen a las personas transgénero —una polémica política de diversidad en el lugar de trabajo— y examino cómo las presiones institucionales influyen en las acciones de los directores ejecutivos de minorías demográficas. Mediante un análisis de los datos de Fortune 500 de 2011 a 2020, el estudio proporciona información sobre los esfuerzos de defensa de las directoras generales pertenecientes a minorías raciales y de género, en particular en lo que respecta a las prestaciones sanitarias que incluyen a las personas transgénero. Los resultados respaldan la predicción teórica de que las directoras generales deben sobreadaptarse a las presiones institucionales y pueden alinear sus acciones más estrechamente con las presiones externas imperantes en comparación con sus homólogos masculinos, pero esta tendencia no es tan evidente en el caso de las directoras generales pertenecientes a minorías raciales. Más concretamente, los resultados muestran que las empresas dirigidas por mujeres son más propensas que las dirigidas por hombres a ofrecer prestaciones sanitarias integrales que incluyan a las personas transgénero cuando tienen su sede en estados de tendencia más liberal y en ciudades donde hay muchas empresas de referencia. Sin embargo, también observo un efecto simétrico negativo. Cuando las empresas con directoras generales tienen su sede en estados más conservadores y cuando hay más

modelos negativos en el mismo sector, las directoras generales son incluso menos propensas que los directores generales a ofrecer prestaciones sanitarias integrales que incluyan a las personas transgénero. Este documento también proporciona pruebas sugerentes del mecanismo subyacente que impulsa mis conclusiones al explotar la variación en cuanto a la política de información de la Campaña de Derechos Humanos (HRC), lo que sugiere que las presiones podrían haber sido mayores cuando la información estaba disponible o era muy visible. En general, el presente estudio contribuye a las instituciones y organizaciones, al liderazgo estratégico y a la literatura sobre diversidad en el lugar de trabajo.

El segundo capítulo, titulado «*Atados por los orígenes: los antecedentes culturales de los directores ejecutivos y el rendimiento* corporativo en sostenibilidad», investiga cómo una característica de liderazgo previamente poco estudiada e invariable en el tiempo (es decir, la herencia cultural) afecta al rendimiento social y medioambiental de las empresas. En concreto, este capítulo se centra en la orientación de los directores ejecutivos hacia la evitación de la incertidumbre (UAI). Basándose en la teoría de los escalones superiores y en los argumentos de transmisión cultural, este estudio demuestra que las empresas dirigidas por directores generales con un mayor UAI están negativamente asociadas con el desempeño ambiental y social en comparación con otras, utilizando una muestra de corporaciones de Fortune 500 que abarca desde 2009 hasta 2021. Los resultados indican que la asociación entre el UAI de los directores generales y el desempeño de sostenibilidad corporativa está moderada negativamente por la proporción de bonificaciones de los directores generales y moderada positivamente por los directores generales recién nombrados. Esta investigación destaca cómo los directores ejecutivos influyen en el desempeño de la sostenibilidad corporativa, en parte a través de sus distintos valores culturales.

En el último capítulo, titulado «*Balancing on the Ledge: How Chief Sustainability Officers Align Philanthropic Donations and Strategic Investments*», en coautoría con Rocío Bonet y Marco Giarratana, exploramos el papel de los directores de sostenibilidad (CSO) en la gestión de las interdependencias entre las donaciones filantrópicas y las inversiones estratégicas en las grandes empresas estadounidenses. En concreto,

investigamos cómo la presencia de un CSO, en particular uno con experiencia en el sector público, influye en la asignación de recursos de las empresas hacia inversiones competitivas, incluidas las donaciones filantrópicas y las inversiones estratégicas en I+D y publicidad. Al analizar un conjunto de datos de 508 624 donaciones de empresas de la lista Fortune 100 entre 2005 y 2020, encontramos una asociación negativa entre las donaciones filantrópicas y las inversiones estratégicas en empresas con un CSO. Este hallazgo sugiere que los CSO desempeñan un papel importante en la optimización de la asignación de recursos. En particular, este efecto es más fuerte cuando el CSO tiene antecedentes gubernamentales, lo que destaca la importancia de la experiencia del sector público en el aprovechamiento de la filantropía para lograr sinergias entre los objetivos sociales y empresariales.

Chapter 1: Minority Status as a Burden? Demographic Minority CEOs, External Pressures, and Contested Diversity Policy

ABSTRACT

This study examines the promotion of transgender-inclusive healthcare benefits—a contentious diversity policy—amid significant heterogeneity in diversity initiatives across organizations. Despite increasing emphasis on workplace diversity and inclusion, demographic minority CEOs in corporate America face unique challenges due to their numerical minority status. The present study investigates how institutional pressures influence their promotion of this policy. Drawing on status-related and institutional theories, I hypothesize that CEOs' responsiveness to external pressures varies according to their demographic minority status. Utilizing a longitudinal sample of Fortune 500 firms from 2011 to 2020, I find that female CEOs tend to overconform to institutional pressures, aligning their actions more closely with these expectations than their male counterparts. Specifically, female CEOs are more likely to implement transgender-inclusive policies in contexts marked by societal acceptance, protective legislation, and cumulative adoption by peers, while they are less likely to do so in environments with minimal diversity efforts among industry peers. In contrast, similar patterns are not observed for racial minority CEOs. Finally, I explore variations in Human Rights Campaign disclosure policies, providing suggestive evidence of the impact of institutional pressures on the implementation of transgender-inclusive healthcare benefits.

Keywords: Female CEO, racial minority CEO, institutional pressures, demographic minority status, contested diversity initiatives, transgender-inclusive healthcare benefits

INTRODUCTION

Fostering workplace diversity and inclusion has increasingly become a key goal for today's organizations and their leaders (Adediran, 2023; Jackson, 2024). To that aim, many companies have intensified their investment in diversity initiatives, which refer to the implementation of one or more policies and practices aimed at improving the workplace experiences and outcomes of targeted group members, such as women, racial or ethnic minorities, immigrants, individuals with disabilities, and lesbian, gay, bisexual, and transgender (LGBT) individuals (Jayne & Dipboye, 2004; Leslie, 2019). Estimates indicate that organizations globally spent US$7.5 billion on diversity-related efforts in 2020 (Ellingrud et al., 2023), with Fortune 1000 companies alone averaging US$1.5 million per year on their diversity initiatives (Atcheson, 2020). Yet, there is substantial heterogeneity in the implementation of diversity initiatives across organizations, with some firms recognized as diversity champions while others make slow or no progress (Dixon-Fyle, Dolan, Hunt, & Prince, 2020; Dobbin, Kim, & Kalev, 2011; Nielsen, 2016).

Researchers have made progress in exploring the drivers of such heterogeneity. Two theoretical perspectives have been used to unpack the factors influencing the promotion and implementation of diversity policies. On the one hand, upper echelon theory and strategic leadership literature highlight the crucial role CEOs play in this promotion (Kelan & Wratil, 2018; Martins, 2020; Wernicke, Sajko, & Boone, 2022). Much attention has focused on the CEO characteristics associated with the adoption of diversity policies. Empirical findings suggest that certain CEO attributes, such as liberal ideology (Briscoe, Chin, & Hambrick, 2014; Roumpi, Giannakis, & Delery, 2020; Weng, Zhang, Chuang, & Church, 2023), a

transformational leadership style (Ng & Sears, 2012), stronger managerial power (Brodmann, Hossain, & Singhvi, 2022), and a positive attitude toward the strategic benefits of workplace diversity (Ng & Sears, 2020), are positively linked to such adoption. Additionally, while the impact of CEO gender and race on diversity policy implementation and outcomes has garnered significant research attention, extant findings yield an ambiguous picture (e.g., Mah, Kolev, McNamara, Pan, & Devers, 2023) with some finding a positive association (Dadanlar & Abebe, 2020; Glass & Cook, 2018) while others finding a null (Cook & Glass, 2015, 2016; Samadanis & Ozbilgin, 2020) or even negative association (Brodmann, Hossain, Al Masum, & Singhvi, 2021). On the other hand, institutional theorists argue that the external context in which a business operates plays a significant role in shaping corporate outcomes (DiMaggio & Powell, 1983; Haveman, 1993; Stainback, Tomaskovic-Devey, & Skaggs, 2010), including the adoption of diversity policies. Prior literature has examined whether normative, coercive, and mimetic pressures, or their interplay, influence diversity policy implementation (Chuang, Church, & Ophir, 2011; Everly & Schwarz, 2015; Gardberg, Newburry, Hudson, & Viktora-Jone, 2023; Shi, Pathak, Song, & Hoskisson, 2018). These studies found that the likelihood of adopting diversity policies decreases for firms headquartered in conservative-leaning states, but increases when state laws prohibiting discrimination or protecting minorities are in effect and when cumulative adoptions by similar organizations are higher. In general, the literature has assumed that external pressures affect all firms and CEOs uniformly without considering the possibility that the impact of such pressures may vary with the characteristics of the CEO (for an exception looking at the interaction between CEO political ideology and institutional pressures, see Roumpi, Giannakis, and Delery, 2020).

The present study aims to investigate how female and racial minority CEOs are pressed by institutional pressures to advance contested diversity policy.

Building upon status-related theories (Berger, Fisek, Norman, & Zelditch, 1977; Eagly & Karau, 2002; Kanter, 1977; Ridgeway, 2001), which posit that status differences constrain the behaviors of women and racial minorities in group decision-making contexts, making them more susceptible to scrutiny (Gligor, Novicevic, Feizabadi, & Stapleton, 2021; Gupta et al., 2018; Lee & James, 2007), unfavorable evaluations from stakeholders (Hekman, Johnson, Foo, & Yang, 2017; Park & Westphal, 2013; Watkins, Simmons, & Umphress, 2019), and legitimacy concerns regarding their leadership positions (Vial, Napier, & Brescoll, 2016), I argue that female and racial minority are compelled to respond more to external pressures when promoting diversity policies characterized by uncertainty and deviations from social norms. Specifically, I focus on the promotion of transgender-inclusive healthcare benefits in corporate America. This context provides a valuable setting to test this argument for two reasons. First, transgender individuals, defined as "those who legally have changed their gender as well as those who socially identify as the opposite gender assigned to them at birth" (Granberg, Anderson, & Ahmed, 2020, p. 2), violate societal gender norms that assert sex is assigned at birth (Dietert & Dentice, 2009; Robinson, Van Esch, & Bilimoria, 2017). Second, offering transgender-inclusive healthcare benefits remains contentious due to high costs, a lack of legal mandates, potential backlash from stakeholders, and polarized societal opinions and hostile attitudes towards transgender issues in American society (Andrews, 2016; Burbano, 2021; Chuang et al., 2011; Fahim, 2007; Human Rights Campaign, 2020; 2021; Li & Nagar, 2013; Pew Research Center,

2022; Wang & Schwarz, 2010). I hypothesize that the extent to which CEOs respond to external pressures is contingent upon their demographic minority status.

Using a hand-collected dataset that includes rich information on CEO backgrounds, data on external pressures arising from the institutional contexts (states, cities, and industries) in which the firms situated in, and coverage of transgender-inclusive healthcare benefits among Fortune 500 corporations between 2011 and 2020, I find partial support for my hypothesis. The findings indicate that female CEOs may need to overconform to institutional pressures, aligning their actions more closely with these pressures compared to their male counterparts; however, I fail to find this trend for racial minority CEOs. Specifically, I find that female CEOs are more likely to offer comprehensive transgender-inclusive healthcare benefits in contexts where societal acceptance of transgender individuals and protective non-discrimination laws are prevalent, and when peer firms in nearby cities increasingly adopt similar measures. Conversely, these female CEOs are less likely to offer such benefits in industries where many firms make minimal or no efforts to advance transgender-inclusive benefits. Additional analyses exploring variation in the Human Rights Campaign (HRC) disclosure policies provide suggestive evidence of the mechanism that institutional pressures play a role in the implementation of transgender-inclusive healthcare benefits.

This study contributes to the literature on institutions and organizations, female and racial minority CEOs, and transgender issues in the workplace. First, it finds that female CEOs tend to overconform to institutional pressures when promoting socially stigmatized diversity practices. The study suggests that inclusive societal norms can reduce the

regulatory influence on these CEOs, and it highlights how organizations also imitate negative role models in adopting contentious policies (cf. Gonsalves, 2023). Second, building on research about the challenges faced by female and racial minority CEOs - such as heightened scrutiny (Gupta et al., 2018; Watkins et al., 2019) and legitimacy concerns (Vial et al., 2016) - this study examines their effectiveness in advocating diversity initiatives. The findings highlight the role of external institutional pressures in shaping these efforts, reconciling the inconclusive relationship between CEOs' demographic status and workplace diversity policies (Cook & Glass, 2015, 2016; Mah et al., 2023; Samadanis & Ozbilgin, 2020). Third, by exploring the adoption of transgender-inclusive healthcare benefits, the study identifies an underexplored determinant of diversity policies for marginalized groups, including LGBT individuals (e.g., Briscoe, et al., 2014; Chuang et al., 2011). It underscores the interplay between CEO characteristics and institutional forces (Boada-Cuerva, Trullen, & Valverde, 2019; Stainback et al., 2010) that influence the advancement of transgender-inclusive healthcare benefits.

THEORY AND HYPOTHESES

Transgender-inclusive Healthcare Benefit as A Contentious Diversity Policy

The current study focuses on the promotion of a diversity policy that is arguably highly contested: the promotion of transgender-inclusive benefits, a niche corporate diversity program aiming to include transgender employees into firms' health benefit plan and to end health benefit discrimination against transgender employees. Transgender-inclusive benefit

program includes insurance contract covering mental health consultation and pharmacy benefits of hormone therapy, applicable medical policy or clinical guidelines and transition-related services (e.g., surgical procedures). There remains high heterogeneity in transgender-inclusive healthcare benefit implementation across companies, with a sizeable number of companies still not adopting at all. For example, only 17 UK companies listed in the FTSE 100 specifically address “transgender individuals” in their diversity and inclusion policies (Beauregard et al., 2018). In 2020, there were still 35% of Fortune 500 companies not offering transgender-inclusive healthcare benefits at all (Human Right Campaign, 2020). This evidence indicates a significant lag in advancing transgender employees’ rights in the workplace. Not all diversity policies face equal levels of contestation, with transgender-inclusive benefits being particularly controversial compared to other diversity initiatives. This is because offering transgender-inclusive benefits is associated with higher level of normative uncertainty and empirical uncertainty.

Normative uncertainty refers to uncertainty arising from different sociocultural expectations and the correct standard of evaluation (Dietrich & Jabarian, 2022; Jackson & Smith, 2006; Lockhart, 2000). First, transgender per se doesn’t conform with societal norms regarding gender expression and transgender people are often facing stigma and intense discrimination (Dietert & Dentice, 2009; Granberg et al., 2020; Robinson et al., 2017). Meanwhile, transgender right is a human right and advocating for transgender right is simply the right thing to do (Thoroughgood, Sawyer, & Webster, 2020) and show organizations’ genuine attitudes towards diversity in general (Li & Nagar, 2013). Such tension makes transgender issues rather counternormative or highly risky, which are likely

to invoke societal and moral merits (Hambrick & Wowak, 2021). A vivid example is the highly divisive and politically polarized nature of transgender issue in U.S. society. For instance, while some transgender-friendly policies, like gender-neutral restrooms, elicit balanced opinions (Burbano, 2021), attitudes towards broader transgender acceptance vary starkly across political lines. 80% of conservative-oriented individuals believe that gender is determined by birth sex, compared to only 36% of liberal-oriented individuals (Pew Research Center, 2017). Republicans are over four times more likely than Democrats to believe that society has gone too far in accepting transgender individuals (66% vs. 15%, Pew Research Center, 2022). Second, the relatively hostile attitudes of American society towards transgender individuals further amplify the controversy surrounding firms' advancement of transgender-inclusive benefits. Recent estimates indicate that fatal violence against transgender people is increasing, with 2020 being the most violent year on record with 44 fatal incidents since 2013. Moreover, the number of anti-transgender bills introduced in state legislatures has skyrocketed from 19 in 2015 to 117 in 2021, spanning 33 states (CNN, 2021; Human Rights Campaign, 2021).

Empirical uncertainty about empirical facts, states, and consequences of options (Nissan-Rozen, 2015; Weatherson, 2014). Transgender-inclusive benefits incur significant financial costs, with estimates indicating that the average annual expenditure per transgender-related insured claimant ranges from $3,194 to $12,771. As "extreme minority", transgender individuals are sometimes marginalized even within the broader gay, lesbian, and bisexual (GLB) community (Billard, 2016; Collins, McFadden, Rocco, & Mathis, 2015). Advancing transgender-inclusive benefits may only appeal to a limited segment of

stakeholders, making it more challenging to align with the current business case for diversity compared to other social categories, such as women, Black and minority ethnic individuals (Beauregard et al., 2018). Firm leaders may find it challenging to anticipate returns on such investments. Moreover, advocating transgender-inclusive healthcare benefits are likely to invoke backlash effects because it is counternormative and highly risky by nature (Ray & Melaku, 2023). Target's support for transgender bathroom policy, for example, led to a boycott by 1.2 million members of the American Family Association (Andrews, 2016). Moreover, there are still many companies refraining from extending this commitment to transgender-friendly health benefits due to uncertainty, such as intense societal contention (Chuang et al., 2011) or lacking knowledge on unique challenges (e.g., stigma and discrimination, hiding gender identity, and hostility) facing transgender people (Thoroughgood et al., 2020). Consequently, firms that offer transgender-inclusive healthcare benefits may risk losing customers, talent, and financial performance, creating causal ambiguity between the implementation of these benefits and firm financial outcomes.

In summary, the United States continues to exhibit divisive and polarized opinions on transgender issues. American society often maintains relatively hostile attitudes toward transgender individuals, compounded by challenges in realizing financial returns from adopting transgender-inclusive policies. Offering transgender-inclusive healthcare benefits is considered as contentious organizational policy and is rife with uncertainties. Amid such uncertainties, CEOs may face dilemmas in implementing contentious diversity policies—a challenge that is particularly pronounced for female and racial minority CEOs.

Female and Racial Minority CEOs and Their Minority Status

Status-related theories, such as token status theory, status characteristics theory, and social congruity theory (Begeny et al., 2021; Berger et al., 1977; Kanter, 1977; Ridgeway, 2001), sustain that women and racial minorities occupy lower positions in the social hierarchy. Specifically, Kanter's (1977) token status theory suggests that demographic minority CEOs, as tokens in corporate upper echelons dominated by whites and males, often attract significant attention and are vulnerable to negative outcomes such as bias and stereotypes questioning their competencies and suitability for leadership roles. Status characteristics theory (Berger et al., 1977) proposes that women and racial minorities are perceived to have lower social status, making them less advantaged and less competent compared to white men in stereotypically masculine positions, such as management roles. Similarly, social congruity theory (Eagly & Karau, 2002) suggests that white men are assumed to possess the desirable qualities for leadership roles, whereas women and racial minorities are viewed as less suitable for managerial positions due to perceptions of lower competence. A fundamental tenet of status-related theories is that status differences constrain the behavior of women and racial minorities in group decision-making contexts, making them more susceptible to scrutiny and unfavorable evaluations from stakeholders. Drawing on the status perspectives regarding female and racial minority leaders, there are two primary reasons why minority-status CEOs might be concerned about the legitimacy of their leadership roles and the uncertainty in their career prospects when advocating for policies that deviate from social norms and shareholder expectations.

First, diversity policies often lack legitimacy in organizations and are perceived by

investors as indicating a reduced commitment to maximizing shareholder value (Bode, Rogan, & Singh, 2022; Solal & Snellman, 2019). Consequently, when female and racial minority leaders advocate for diversity, it is frequently viewed as an attempt to compensate for perceived low status and incompetence (Hekman et al., 2017). These leaders are likely to face penalties for their diversity-valuing actions, resulting in worse performance evaluations (Hekman et al., 2017). As a result, demographic minority CEOs may remain silent on controversial decisions. Second, compared to their white male counterparts, female and racial minority CEOs are highly visible and subject to intense scrutiny and elevated performance expectations from shareholders, investors, and analysts (Gligor et al., 2021; Gupta et al., 2018; Lee & James, 2007). Their minority status in the corporate world (Kanter, 1977; Watkins et al., 2019) makes them more susceptible to criticism. For example, stock markets tend to react more negatively to the appointment of female (Lee & James, 2007) and Black CEOs (Gligor et al., 2021). Gupta et al. (2018) found that female CEOs encounter greater threats of shareholder activism, owing to pervasive gender stereotypes that question their competence in maximizing financial returns. Failures by demographic minority CEOs are often disproportionately blamed by journalists, who may attribute poor performance to discriminatory biases against these leaders (Park & Westphal, 2013). Such intense scrutiny leads minority CEOs to be cautious of any actions that deviate from core business activities (Watkins et al., 2019).

In summary, heightened scrutiny from key stakeholders and the potential for career penalties are likely to lead demographic minority CEOs to “criticize the status quo for informally excluding women or minority ethnic individuals; however, they may also

hesitate to implement radical equality measures for fear of provoking backlash from the white male majority, particularly from their own sponsors" (Kirton, Greene, & Dean, 2007, p. 1982). Institutional pressures play a pivotal role in mitigating the associated uncertainties and legitimatizing demographic minority CEOs' actual implementation of contentious diversity policy. The next section will elaborate on how demographic minority CEOs rely on institutional pressures to legitimize their actions and mitigate the uncertainties associated with the advancement of transgender-inclusive healthcare benefits, such as increased scrutiny from observers and potential career penalties.

Interaction Effect of Institutional Pressures and CEOs' Demographic Minority Status

Institutional theory suggests that organizations conform to institutional pressures for change because they are rewarded for doing so through increased legitimacy, resources, and survival capabilities (DiMaggio & Powell, 1983; Scott, 1987). Ignoring the pressures exerted by externally powerful actors weakens organizational legitimacy, especially when the costs (e.g., loss of support from the government, fines, reputational loss) of noncompliance are high (Stainback et al., 2010). Similar to other stigmatized diversity policies (e.g., offering same-sex partner healthcare benefits), offering transgender-inclusive healthcare benefits is often associated with uncertainty arising from sociocultural norms and expectations, state legal environment, questions around the monetary costs and long-term financial returns (Chuang et al., 2011).

One significant source of uncertainty associated with offering transgender-inclusive

healthcare benefits stems from the degree of societal acceptance of transgender individuals. American society holds divisive opinions on transgender individuals and transgender-friendly policies (e.g., gender-neutral restrooms), particularly among ideologically polarized stakeholders (Burbano, 2021). This divergence suggests that firms in conservative (liberal) states may be more (less) reluctant to promote transgender-friendly policies. Consequently, firms face significant legitimacy pressures and uncertainty when offering transgender-inclusive healthcare benefits if they are perceived as violating emergent norms in their institutional environment (Marquis & Tilcsik, 2016). Conforming to normative pressures mitigates these concerns, as normative pressures arise from collective expectations of appropriate and legitimate behavior (DiMaggio & Powell, 1983; Scott, 2001). Organizations must follow dominant beliefs and customs to gain support from the broader institutional environment. For example, firms' responses to workplace inequalities, such as race integration and sex segregation, often depend on their interpretation of the political context of their locations (Stainback, Robinson, & Tomaskovic-Devey, 2005; Stainback, 2008). Political ideology (liberalism vs. conservatism) serves as a proxy for normative pressures and societal attitudes towards social inequality (Jost et al., 2003; Price, Nir, & Cappella, 2006; Roumpi et al., 2020; Skitka & Tetlock, 1993). For example, liberalism favours social justice and equality over markets relative to the conservative ideology (Jost et al., 2003). One may expect that liberal-leaning people are relatively more likely to support organizational practices that are dedicated to reducing social inequality and segregation. Evidence from studies on Fortune 500 and S&P 500 corporations indicates that firms headquartered in conservative-leaning states are less likely to adopt LGBT-friendly policies (Gardberg, Newburry, Hudson, & Viktora-Jone, 2023;

Roumpi et al., 2020). As demographic minority CEOs face more legitimacy threats of their leadership positions and stringent scrutinizes from key evaluators (e.g., the board, employees, security analysts), they are expected to be more pressed to conform to normative pressures regarding contentious diversity policy implementation such that demographic minority CEOs may be more hesitant to challenge the status quo and less likely than their white and male counterparts to offer transgender-inclusive healthcare benefits in conservative states.

Another important source of uncertainty arises from whether the legal environment protecting transgender people's rights. The extent of state legal protections for transgender rights plays a crucial role in reducing uncertainty arising from societal hostility towards transgender individuals. Coercive isomorphism results from conformist pressures exerted by powerful external entities, such as governments and regulators (DiMaggio & Powell, 1983; Stainback et al., 2010). Firms that fail to comply with state anti-discrimination laws or diversity regulations incur both tangible (e.g., lawsuit fees and fines) and intangible (e.g., reputational damage) costs (Bao et al., 2014; Burns, 2012; James & Wooten, 2006). Data from large American companies consistently show a positive association between state legislation protecting LGBT people and the adoption of LGBT-friendly practices (Cheng & Roy, 2023; Chuang et al., 2011; Everly & Schwarz, 2015). Stronger regulatory acceptance of transgender individuals helps mitigate pressures and concerns faced by demographic minority CEOs. Regulatory protections provide these CEOs with latitude to promote contested diversity policies without facing stringent scrutiny from external stakeholders. Boards and investors are less likely to blame demographic minority CEOs for

implementing transgender-inclusive benefits when such actions are legally mandated, as this reduces the risk of losing support from local governments or critical resources by violating state laws. Therefore, demographic minority CEOs may feel even more compelled than their white and male counterparts to comply with state laws and regulations protecting transgender employee rights.

Finally, the difficulty in assessing the returns and costs of promoting transgender-inclusive benefits also lead to empirical uncertainty (e.g., Chaung et al., 2011). In such uncertain conditions, firms may adhere to mimetic pressures by imitating the practices of other corporations within the same industry or geographic location, as the prevalence of previously controversial policies can establish new norms (DiMaggio & Powell, 1983; Haunschild & Miner, 1997). An example of this mimetic behavior is observed in the airline industry: after United Airlines became the first U.S. airline to offer equal health benefits to same-sex partners in 1999, competitors like Delta and TWA soon followed suit (Forbes, 2016). Empirical studies on large American corporations suggest that the likelihood of adopting LGBT-friendly policies increases when more firms in the same industry or nearby states are recognized as favorable workplaces for LGBT employees (Everly & Schwarz, 2015; Roumpi et al., 2020). Demographic minority CEOs will be pressured to promote contested diversity policies when peer firms also cover transgender health insurance because such actions become the new norm within the organizational field, reducing the risk of criticism for deviating from core business activities. By contrast, demographic minority CEOs tend to against such contentious diversity policy when there are more companies in the same organizational field devoting minimal or no commitment

to such policy.

In summary, firms led by female CEOs or racial minority CEOs are more likely than those led by white male counterparts to overconform to institutional pressures regarding the offer of comprehensive transgender-inclusive healthcare benefits. When institutional pressures are favorable and supportive of transgender individuals' rights, female and racial minority CEOs are likely to promote progressive transgender-inclusive healthcare policies. Conversely, I anticipate a negative symmetric effect, where, in contexts where institutional pressures are unfavorable or less supportive of transgender rights, female and racial minority CEOs are less likely to adopt such contentious diversity policies. Put it formally,

Hypothesis 1a (H1a) *Female and racial minority CEOs are more (or less) likely than white male CEOs to adopt transgender-inclusive healthcare benefits when their firms are headquartered in liberal (or conservative) states.*

Hypothesis 1b (H1b) *In states with stronger (or weaker) legal protections for transgender rights, female and racial minority CEOs are more (or less) likely to offer transgender-inclusive healthcare benefits.*

Hypothesis 1c (H1c) *Female and racial minority CEOs are more (or less) likely to adopt transgender-inclusive healthcare benefits when there is a higher (or lower) prevalence of such policies among peer firms within the same industry or geographical location.*

METHODS

Sample and Data

I started with a sample including all the companies that were listed in Fortune 500 between 2011 and 2020.[1] I choose 2011 as the starting year because Human Right Campaign (HRC) started to rank all Fortune 500 firms from that year and the new reporting policy also allows me to observe which firm is rated on a voluntary basis and which is not.[2] I choose 2020 as the ending year of my sample because 2020 is the last year that HRC published both overall Corporate Equality Index (CEI) rating and sub-dimension rating in its annual CEI report. Next, I merged the firm list with the information on firm's rating on each LGBT-friendly policy and overall CEI score from HRC, which is a credible and benchmarking tool for evaluating the coverage of sexual minorities' diversity policies and equal benefits in the workplace provided by firms. HRC published CEI report annually since 2002 except for the year of 2007.[3] Although the HRC has modified the rating criteria for CEI rating every few years, CEI rating system constantly covers four main areas (1) non-discrimination policies and equal opportunities based on sexual orientation and gender identity; (2) equal health coverage for same-sex partners and transgender employees (e.g., health insurance, gender-transition surgery); (3) diversity training and resource group for LGBT; and (4) firms' public commitment to diversity and inclusion for LGBT groups. I relied on the *Execucomp* and firm annual reports to identify the names of CEO. I hand-collected CEOs' demographic attributes (sex, year of birth, race), educational

[1] Firms that have appeared in the Fortune 500 at least once will be counted.

[2] Fortune 500 firms that included in the CEI ranking before 2011 was on a voluntary basis only. The HRC disclosed unofficial rating for those Fortune 500 firms that didn't respond to the HRC's repeated invitations based on public available information. It's reasonable to expect that firms will have higher mean score before 2011 and we will observe a sharp decrease once all firms are given a rating. Indeed, in Cook & Glass's (2016) study, Fortune 500 firms on average got 71.3 out of 100 on CEI rating during their sample period 2001-2010. However, Fortune 500 firms experienced a significant decrease on CEI scores (dropped to 63.3) during the period 2011-2020 based on my sample.

[3] HRC first included the rating on transgender-inclusive benefits in 2006 but stopped publishing CEI in 2007.

background (information on the type of degree earned: MBA degree or Legal degree), and career information (the year being appointed as CEOs and the year CEOs left, job titles) from multiple data sources: BoardEx, Business Week's Executive Profile and Biography, the corporate websites, and NNDB. Where necessary, data were supplemented with business press articles about the CEO, university webpages about distinguished alumni, and third-party agency's annual report (e.g., Hispanic Association on Corporate Responsibility). I obtained firm financial and accounting data from *Compustat*. Delisted firms, firms that are merged or acquired, and firms with missing data on total assets, the number of employees and net incomes in *Compustat* were removed. Firms that have experienced headquarters' transition from the United States to other countries within my sample window were also removed to hold the institutional, legal framework, and economic environment constant (as opposed to cross-national samples). Firms with Co-CEO or interim CEOs were also removed from the sample.[4] As a result, I had a firm-year matched unbalanced panel dataset involving 631 unique firms and 4105 firm-year observations for the main regression analysis.

Measures

Dependent variables

According to the HRC, the ratings for transgender-inclusive health benefits is ranging from 0 to 10, there are three possible values: 0, 5, and 10. Firms that offer partial transgender

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I collected data from 2008 to 2010 for suggestive mechanism testing.

wellness benefits (e.g., offering equal access to employee health insurance but not offering gender-transition surgery) will get 5 out of 10. For each company-year, the item "*perfect trans benefit*" is coded as "1" if the organization provides a comprehensive transgender-inclusive health benefits (i.e., obtained perfect score), indicating that firms are genuinely engaged in this controversial diversity policy, and "0" otherwise. Alternatively, I coded the dependent variable for robustness checks in two ways: first, I coded "*trans benefit*" as "1" if a firm cover the possible transgender wellness benefits either fully or partially, and "0" otherwise. Second, I used the ratings as it given (0, 5, 10).

Independent variables

"Lumping" approach that group racial minorities and women together are problematic because it obscures the fact that each minority groups have unique lived experiences (Ursel, Durante, & Elsaid, 2023; Zhang, Mooney, & Ozgen, 2024), therefore, I also treat female CEOs and racial minority CEOs as two distinct demographic groups in empirical analysis. "*Female CEO*" takes the value of "1" if a firm is led by a female CEO and "0" if a firm is led by a male CEO. Consistent with prior workplace inequality and diversity literature, "*Racial minority CEO*" takes the value of "1" if a firm is led by a racial minority CEO (i.e., African American, Asian American, Hispanic or Latino) and "0" if a firm is led by a white CEO.

Consistent with prior literature conceptualizing or measuring institutional pressures

[4] Results don't change by including Co-CEOs and interim CEOs in the statistical analysis.

(Gardberg et al., 2022; Heugens & Lander, 2009; Stainback et al., 2010), *"Normative pressure"* is measured as the mean policy preferences of mass public in each geographic unit and time period using multi-level regression with post-stratification (MRP), and has been adjusted for race, gender, and education. Tausanovitch and Warshaw (2013) constructed the dataset basing on data from the 2006-2020 Cooperative Election Studies and the 2019-2020 UCLA/Nationscape Surveys and made the dataset publicly available. Higher values on state MRP ideology are associated with politically conservative preferences while lower values are associated with politically liberal preferences.[5] *"Coercive pressure"* is coded as "1" if a state covers anti-discrimination laws targeting gender identity in four different areas (private employment law, public/state employment law, housing, and public accommodation) and "0" otherwise. This variable is collected for a state each year when relevant antidiscrimination law became effective during the period 2011-2020. I operationalized mimetic pressures at both industry and geolocation level. *"Industry peers receiving high CEI"* is operationalized as the number of firms that get excellent CEI score (i.e., equal or above 80 and ranked in the top 25th percentile of CEI score) within the same industry (two-digit SIC) in prior year while *"Industry peers receiving low CEI"* is measured as the number of firms receiving worse CEI score (i.e., equal or below 30 and ranked in the bottom 25th percentile of CEI score). "*Geolocation industry peers receiving high CEI*" is measured as the number of firms who get excellent CEI score within the same city that the firm headquartered. I rely on CEI annual report to

[5] The data is available at: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/BQKU4M

identify firms' headquarters at the time being rated by HRC.[6] The rationale behind this would be that firms tend to follow the benchmarks based on either industry competition or geographical proximity.

Control variables

This study includes a range of variables to control for alternative explanations of firms' orientations towards transgender-inclusive benefits that may be correlated with CEO ascriptive traits (i.e., gender and race). At CEO-level, I control for "*CEO age*", whether the CEO has an *MBA degree* (0/1) or a *law degree* (0/1), *CEO-Chairman duality* (0/1), *CEO tenure* (measured by years). At firm-level, I control for a range of accounting ratios that reflect a firm's financial health and slack resources because firms with more financial resources tends to offer transgender-inclusive benefits that incur financial costs. These variables include *ROA* (calculated as the ratio of net income to the book value of total assets in prior year), *Tobin's Q* (the ratio of the sum of book values of total assets plus market values of the firm's common equity minus the book value of common equity and deferred taxes to book value of total assets), *capital intensity* (the ratio of capital expenditure to total assets from previous year), *leverage* (calculated as the sum of long-term debt and debt in current liabilities divided by total assets), as well as *financial slack* resources (calculated as the sum of cash and short-term investments divided by the book value of total assets). As larger firms might attract intense media attention because of

[6] *Compustat* only shows the most recent headquarters of firms the time you downloaded the data while CEI report can be used to track whether a firm has relocated its headquarter to other states or other countries.

their high visibility, I include logged values of total assets and number of employees to proxy firm size. *Firm age* (number of years since founded and log transformed) is controlled because old firms are more likely to develop organizational inertia and become more conservative. As transgender-inclusive benefits could be a tool for attracting talents and consumers, it's reasonable to expect firms in high-technology industry and firms with good marketing strategies are more likely to advance transgender-friendly policy, I therefore control for "*Innovation intensity*" (R&D expenditure divided by total assets in prior year) and "*Marketing intensity*" (advertising expenditure divided by total assets in prior year). I also include overall corporate governance quality score to reflect a board's gender diversity and independence, and the overall social performance score reflecting firm's performance in human right and diversity, both of which is obtained from the Refinitv ESG database. At environmental level, certain industries might be more friendly towards LGBT employees (Everly & Schwarz, 2015). There are also significantly cultural differences across areas with respect to same-sex partner benefits (Li & Nagar, 2013). Macro-level factors and business cycles that may also influence firms' business performance and operational environments. I therefore include industry dummies as identified by the 2-digit NAICS code, year dummies and region dummies.[7] A summary of variable descriptions is displayed in Appendix A.

[7] According to Li & Nagar (2013), firm's headquarter location is a strong predictor of same-sex domestic partner benefits' adoption. Consistent with their practice, I also divide the firm location based on their headquarter states into nine regions: Pacific, Mountain, West South Central, South Atlantic, West North Central, East North Central, Middle Atlantic, New England, and East South Central (Li & Nager, 2013, p.535).

Estimation Methods

Because the dependent variable is dichotomous and my key independent variables (i.e., CEO gender and CEO race) have little variation over time (approximately 1.2% of the firms in the sample experienced CEO successions with either gender or race change), I used logistic regression with random-effects regressions for the main analysis. Firm fixed effects model is designed to account for the unobserved and time-invariant factors (e.g., management quality or corporate culture) that may have an impact on a firm's diversity policy adoption. It's difficult to estimate within-firm effects when there is no or little within-firm variation in independent variables (Certo, Withers, & Semadeni, 2017). Using panel logit models with firm fixed-effects in my context will also suffer loss of observations and sample selection bias, as a result, logistic regression with random effects is preferred.[9] I ran all regression models with robust standard errors clustered at the firm level to account for potential autocorrelation.

RESULTS

Table 1 displays the descriptive statistics and correlation matrix of the key variables used for main statistical analysis, including their means, standard deviations, and zero-order correlations. On average, 43% of firms have a comprehensive transgender-inclusive health

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[8] With respect to industry FE, I also used two-digit SIC and three-digit SIC as robustness checks, which produce similar results.

[9] Using panel logit models with firm fixed effects across main regression models make my sample size drop from 4105 to 2187 (more than 53% of observations lost). Alternatively, I employed linear probability model (LPM) with firm fixed-effects to control for time-invariant factors that influence the presence of demographic minority CEOs and the promotion of controversial diversity policy, such as corporate culture and management

benefit from 2011 to 2020 (S.D.= 0.495), which indicates that certain variations on the adoption of such policy exist across large America corporations. 5.1% of the firm-year observations have female CEOs. Approximately 5.7% of firm-year observations have racial minority CEOs (African American, Hispanic and Latino American, and Asian American accounts for 0.8%, 2.2%, and 2.7% respectively).

Insert Table 1 about here

Table 2 reports results of random-effects logistic regression predicting the likelihood of firms to offer comprehensive transgender-inclusive healthcare benefits by female CEOs. In Table 1, Model 1 includes only the control variables. Model 2 adds the independent variable *Female CEO*, the sign on the coefficient is positive but without statistical significance (β = 0.53, p = 0.553), showing that female CEOs are as likely as their male counterparts to advance comprehensive transgender-inclusive policy, which suggests that the presence of female CEOs alone has rather minimum effects in advancing contentious diversity policy. Model 3 indicates that female CEOs are less likely than male CEOs to advance contested diversity policy when firms headquartered in politically conservative states (β = -20.07, p = 0.003). By calculating the estimated marginal effects of normative pressures on the likelihood of offering comprehensive transgender-inclusive healthcare benefit for both female and male CEOs at the means of other independent variables, a one-unit increase in normative pressures significantly reduces the likelihood of promoting such benefits by approximately 1.84 times more for female CEOs than for male CEOs.

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quality. Results largely show robustness, see Appendix D.

Results from model 4 show coercive pressure positively moderate the correlation between CEO gender and transgender-inclusive benefit (β = 3.68, p = 0.006), an economic interpretation is for female CEOs, the probability of promoting healthcare benefits for transgender employees increases by approximately 31.54% for each unit increase in coercive pressure (p = 0.007), this effect is considerably larger compared to male CEOs. Model 5 suggests that female CEOs are subjected to mimetic pressures based on geographical proximity (β = 0.29, p = 0.053) such that female CEOs are approximately 5.7 times more likely than male CEOs to promote advance comprehensive transgender-inclusive healthcare benefits in response to a one-unit increase in the number of firms receiving high CEI score nearby the focal firm's headquarter, with the likelihood increasing by 3.05% for female CEOs compared to 0.53% for males. Model 6 shows no statistically significant association found between "*Female CEO × Industry Peers Receiving High CEI"* (p > 0.1). Conversely, the coefficient on "*Female CEO × Industry Peers Receiving Low CEI*" from Model 7 suggests that female CEOs are less likely than male CEOs to offer comprehensive transgender-inclusive healthcare benefits when there are increasing number of firms in the same industry receiving low CEI score (β = -0.87, p = 0.041). The average marginal effects suggest that for one unit increase in the number of industry peers receiving low CEI score, firms led by female CEOs are less likely to promote such policy by approximately 12.66%, which is 3 times greater decrease in the promotion of diversity policies relative to their male counterparts when faced with each one-unit increase in negative industry peers. Model 8 includes all interaction terms, the coefficient on interaction term "*Female CEO × Normative pressure*" is still negative and statistically significant at 5% level (β = -14.3, p = 0.054), however, "*Female CEO ×*

Coercive Pressure" is no longer statistically significant though the sign on the coefficient is positive as expected (β = 1.18, p = 0.419), suggesting that normative pressure and coercive pressure in the current context are potential substitutes for each other, this might because liberal states or cities are more likely to have regulation or laws protecting transgender individuals. The coefficient on "*Female CEO* × *Geolocation Peers Receiving High CEI*" is positive and lost its statistical significance (β = 0.33, p = 0.152). Similar to results from Model 7, the coefficient on "*Female CEO* × *Industry Peers Receiving low CEI*" in Model 8 is negative and statistically significant (β = -1.83, p = 0.056). These results generally support that compared with male CEOs, female CEOs are subject more to external pressures regarding controversial diversity policy promotion.

Results from Table 3 suggest that racial minority CEOs are also as likely as white CEOs to advance contested diversity policy, and they are not succumbing to institutional pressures regarding the promotion of transgender-inclusive healthcare benefits because no statistical significance found on the coefficients of all interaction terms between racial minority CEOs and various types of external pressures. The only exception is that the coefficient on the interaction term "*Racial minority CEO* × *Industry peers receiving high CEI*" is positive and statistically significant (β = 0.12, p = 0.053) when all interaction terms have been included, as shown in Model 7 of Table 3. Motivated by the results and the fact that all racial minorities should not be treated as a single homogenous group (e.g., Ursel et al., 2023; Zhang et al., 2024), I also look at Hispanic CEO and Asian American CEO respectively. The interaction term "*Hispanic CEO* × *Industry peers receiving high CEI*" is positive and statistically significant (β = 0.13, p = 0.124), indicating that the probability of

advancing comprehensive transgender-inclusive policy is increasing for Hispanic CEOs when industry mimetic pressures are higher. However, I didn't find similar patterns for Asian American CEOs (β = 0.091, p = 0.287).[10] Results are reported in Appendix B. However, given the rather limited number of Hispanic and Asian American CEOs, the results should be cautiously interpreted due to the limited statistical power.

To further substantiate my findings that female CEOs conform to institutional pressures more than their male counterparts, but this pattern does not extend to racial minority CEOs, I incorporated interaction terms between CEOs' demographic minority characteristics (i.e., gender and race) and institutional pressures into the same model, as presented in Table 4. The results in Table 4 are both qualitatively and quantitatively consistent with those shown in Tables 2 and 3. These findings reinforce the notion that female CEOs are more susceptible to institutional pressures, particularly in advancing contentious diversity policies. However, this trend is less pronounced for racial minority CEOs. Overall, hypotheses 1a through 1c are supported for female CEOs but not for racial minority CEOs.

Insert Table 2, Table 3, and Table 4 about here

Figures 1 to Figure 4 are used to provide graphical support of my hypotheses. Figure 1 shows female CEOs are more (less) likely to advance transgender-inclusive benefits when their firms are headquartered in liberal (conservative) - leaning states. Figure 2 indicates a

[10] I also tested the interaction term "*Black CEO* × *Industry peers receiving high CEI*", which is positive but without statistical significance (β = 0.04, p = 0.780). The results should be interpreted very carefully because

stronger association between women CEOs and the advancement of transgender-inclusive benefits for firms located in states where the law protections for transgender individuals are stronger. Figure 3 shows that when there are more benchmarking firms headquartered in the same city, female CEOs are more likely to promote comprehensive transgender-inclusive healthcare benefits. Figure 4 further shoes results that as more peer firms in the same industry perform worse on CEI rating, female CEOs are less likely than male counterparts to advance comprehensive transgender-inclusive healthcare benefits.

Insert Figure1, Figure 2, Figure 3, and Figure 4 about here

Additional analysis: Testing the suggestive mechanism

Previous research shows that mandating information disclosure and non-government agency's rating policy change are effective means of regulating firm behavior because the mandated disclosure policy invoke pressures for performance improvement (Doshi, Dowell, & Toffel, 2013; Chatterji & Toffel, 2010). Similarly, I utilized variation regarding the reporting policy of the HRC to test suggestive evidence of the mechanism. Before the year 2011, only those companies who volunteered to report their LGBT-friendly policy adoption to HRC would be rated. From 2011, HRC decided to feature all Fortune 500 companies, regardless of whether they are volunteered to disclose the information or not, making annual CEI rating even more visible for Fortune 500 firms. Companies that adopted due to

African American CEOs only account for 0.8% of my sample and significantly reduce the statistical power.

external pressures are thus more likely to be observed after 2011 than before that year. In other words, pressures might have been higher when information was available or highly visible than when it was not. I replicated the analyses for the companies that volunteered to report information to the HRC during the period 2008 to 2010 and compared the results with a subsample of companies that are rated voluntarily only from 2011 to 2020. I didn't find evidence that external pressures significantly moderated the correlation between female CEO and the probability of advancing transgender-inclusive benefit (Table 5), suggesting that female CEOs didn't behave differently from male CEOs when pressures to disclose information on firm's LGBT-related diversity policies are lower.[11]

Insert Table 5 about here

Robustness checks and supplementary analyses

I conducted a battery of robustness tests to address endogeneity concerns and check whether my findings are sensitive to alternative model specification or measurement choices. I included the lagged dependent variable (LDV): whether the focal firm has been ranked as the "Best Place to Work" for LGBTQ by the HRC in prior year to mitigate concerns for reverse causality, in doing so, I am able to verify that it is the intersection effect between CEO's gender and institutional pressures "Granger causes" the adoption of transgender-inclusive benefit, and not vice versa. Results doesn't change substantively by

[11] It should also be noted that the results of suggestive mechanism should be interpreted carefully due to the relatively limited sample size for statistical analysis.

adding LDV (Appendix C). Omitted variable bias is another concern that may lead to spurious results, for example, unobserved and time-invariant factors (e.g., corporate culture) that might lead to the appointment of female CEOs and promotion of diversity policies. To address such endogeneity concern, I used linear probability model with firm-fixed effects, which take those time-invariant factors into account (Appendix D). Additionally, firms having female CEOs are not random and hence is endogenous. To mitigate the endogeneity concerns, I employed the coarsened exact matching (CEM) method by matching firms with female CEOs (treatment group) and firms with male CEOs (control group) to improve the comparability between firms, CEM method produce similar results (Appendix E).

I also relied on a subsample of firms that have not experienced CEO succession with gender change from 2011 to 2020 to tackle concerns over omitted variables bias that might simultaneously drive both CEO gender and the adoption of transgender-inclusive benefits. My results don't change substantively, and these results further mitigate the concerns for static firm-specific omitted variable bias. Second, I alternatively used both two-digit SIC and three-digit SIC code as alternative industry dummies and obtained similar results (Appendix F and Appendix G). Third, I operationalized my dependent variable in an alternative way. I measured transgender inclusive policy adoption as whether the firms have transgender-inclusive health benefits or not (i.e., coded as "1" if the focal firm at least offer partial coverage on transgender-inclusive benefits and "0" otherwise). These analyses further confirm the robustness of my findings (Appendix H). I operationalized normative pressure, as the percentage of adults who self-identify themselves as conservatives (*versus* liberals) for each year and for each state based on yearly polls across the United States,

which is maintained by Gallup.[12] Coercive pressure is alternatively measured as the cumulative number of effective anti-discrimination laws targeting gender identity in four different areas: private employment law, public/state employment law, housing, and public accommodation. This variable is collected for a state each year when relevant antidiscrimination law became effective during the period 2011-2020. I also used the number of firms within the same state instead of the same city to proxy mimic pressure based on geographical location. Results doesn't change substantially.

I conducted several additional analyses to rule out alternative theoretical explanations, such as managerial power and resource dependence accounts, and to demonstrate the robustness of the findings. First, research has documented that female CEOs are more likely to promote diversity-related policies when there are more women in top leadership positions, such as top management team (TMT) positions and directors on the board (Cook & Glass, 2015; 2016). I used the "*Female top manager*" to measure the number of women in TMT and included the interaction term "*Female CEO* × *Female top manager*" in my regression model (Appendix I). Similarly, I also included the interaction term "*Female CEO* × *Female director*" in the regression model, in which "*Female director*" is measured as the number of female directors on the board (Appendix J). These results generally indicated that external pressures are more significant for female CEOs than the resources provided by female executives or directors in this context. Second, prior literature suggests that a CEO's managerial power can amplify the relationship between CEO background (e.g., political ideology) and firms' support for LGBT employees (Briscoe et al., 2014). It

[12] Data on self-identified ideology by state is available at https://news.gallup.com/topic/ideology.aspx, the

could be possible that demographic minority CEOs with greater managerial power can buffer organizational inertia and external pressures to promote riskier and more contested policies in organizations. Accordingly, I tested this alternative mechanism by including the interaction term "*Female CEO* × *Managerial power*".[13] This set of analyses also shows that external pressures, rather than CEOs' managerial power, are more influential for female CEOs in promoting comprehensive transgender-inclusive healthcare benefits (Appendix K).

DISCUSSION

This study highlights the complex relationship between CEO ascriptive traits (i.e., gender and race) and contentious diversity policies promotion by considering the contingent influence of external pressures. The current study posits that demographic minority CEOs are afforded more latitudes to advance transgender-inclusive healthcare benefits only when they have the right circumstances to do so. Specifically, female CEOs are more likely to offer comprehensive transgender-inclusive healthcare benefits in institutional contexts where societal acceptance of transgender individuals and protective non-discrimination laws are prevalent, and when peer firms are increasingly adopting similar measures. Conversely, these female CEOs are less likely to offer such benefits when there is a rising number of firms within the same industry that make minimal or no efforts toward

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data is currently available from 2011 and 2018.

[13] CEO power is a formative index based on CEOs' ownership (i.e., percentage of shares held by the CEO, founder status) and structural power (i.e., Chairman-CEO duality, CEO job tenure, and number of position titles held by the CEO) dimensions. Diversity ratio is measured as either the proportion of female directors on the board or the percentage of female executives in top management team (listed in *Execucomp*) in the firm *i*

inclusivity. This study also utilizes variations in the Human Rights Campaign (HRC) disclosure policies to suggest mechanisms influencing firm behavior, ssuggestive mechanism of this study is that the increased external pressures and information visibility enforced by HRC's reporting and rating policy to disclose CEI for all Fortune 500 CEOs potentially drive female CEOs overconforming to institutional forces more than male CEOs. The current study aims to make several contributions to literature on institutions and organizations, women and racial minority in leadership, and transgender issues in the workplace.

Implications for research

First, research has long indicated unique challenges faced by female and racial minority CEOs after promotion, including heightened scrutiny (Gupta et al., 2018; Watkins et al., 2019), unfavorable evaluations from key stakeholders (Hekman et al., 2017; Park & Westphal, 2013), lack of managerial power (Glass & Cook, 2016), and legitimacy concerns regarding their leadership positions (Vial et al., 2016). This study extends this research by focusing on the effectiveness of female and racial minority CEOs in advocating for diversity initiatives. Results suggest that these efforts must be understood through the lens of how external pressures from the institutional environment shape the advocacy efforts of demographic minority CEOs, thus helping to reconcile the somewhat inconclusive relationship between CEOs' demographic minority status and the advancement of workplace diversity policies (e.g., Cook & Glass, 2015, 2016; Mah et al., 2023; Samadanis

in year *j*.

& Ozbilgin, 2020). This study also shows female CEOs tend to overconform institutional pressures when it comes to contested diversity policy promotion, however, this trend is less evident for racial minority CEOs. One potential interpretation for my failure to find results supporting the notion that racial minority CEOs also overconform to external pressures may lie in the fact that women and racial minorities do not experience uniform disadvantage (Naumovska, Wernicke, & Zajac, 2020). For example, while persistent and prevalent gender role stereotypes continue to affect perceptions of women's leadership potential and competency (Braun et al., 2017; Villamor & Aguinis, 2024), beliefs surrounding "white leadership standards" have become less extensive than in the past and are moving in a more positive direction (Charlesworth & Banaji, 2019; Ubaka, Lu, & Gutierrez, 2022). This suggests that racial minority CEOs might not face the same level of disadvantage as female CEOs, and therefore may not always need to succumb to external pressures. In general, the current study helps in pinpointing the external pressures faced by each minority group are different and it might be problematic grouping women and racial minorities as one single minority group (Ursel et al., 2023; Zhang et al., 2024). Different external pressures faced with women and racial minorities may also reflect the different social expectations and stereotypes that they need to deal with.

Second, in examining institutional contexts, the author finds that female CEOs tend to overconform to institutional pressures when promoting contentious diversity practices that are socially stigmatized and fraught with uncertainty. The results suggest that societal norms may substitute for regulatory environments; when societal norms are more inclusive towards transgender individuals, the regulatory environment exerts less influence on female

CEOs. The paper also contributes to the limited literature recognizing that organizations imitate not only successful peers but also negative role models (Gonsalves, 2023) in the adoption of contentious diversity policies.

Third, it has been argued that a firm's engagement in workplace diversity and inclusion signals its attention to employees and external stakeholders (e.g., advocacy group, social movement organization) as well as its commitment to emergent social values. Emerging studies have focused on diversity practices targeting marginalized and socially stigmatized groups, such as gays and lesbians. However, research has exclusively focused on LGB-friendly policies (e.g., same-sex partner benefits, gay and lesbian employee resource group) (Briscoe et al., 2014; Briscoe & Safford, 2008; Chuang et al., 2011; Chuang et al., 2018; Li & Nagar, 2013) but neglects the unique challenges facing transgender individuals (Thoroughgood et al., 2020) and the fact that transgender individuals receive employee healthcare benefits at a significantly lower rate than LGB people (Cheng & Roy, 2023). By examining under which conditions transgender-inclusive healthcare benefits are adopted, this study adds to the burgeoning literature on the antecedents of socially stigmatized and controversial diversity policies supporting LGBTQ+ group (Briscoe et al., 2014; Briscoe & Safford, 2008; Chuang et al., 2011; Chuang et al., 2018; Everly & Schwarz, 2015; Weng et al., 2023).

There are also practical implications emerging from my findings. My results suggest that external pressures play crucial roles in shaping female and racial minority CEOs' propensity to support socially stigmatized and marginalized groups, such as transgender individuals. Internal and external stakeholders such as employee resource group,

responsible institutional investors and LGBTQ advocacy groups and allies have constantly exerted pressures on firms for creating more diverse and inclusive workplaces for minority employees, which might align with or deviate from state-level political preferences, legal environment or industry-level diversity climate. Demographic minority CEOs could utilize these forces and tensions to advance diversity policy that align with firms' strategy and operating environment without sacrificing the legitimacy of their leadership positions.

Limitations and Directions for Future Research

There are several limitations should be noted, which also open opportunities for future research. First, the present study only focuses on the antecedents of offering healthcare benefits for transgender individuals but doesn't evaluate the effectiveness of the implementation of transgender-inclusive benefits. Future research could examine employees' reactions towards such policy and their actual experiences at workplace, both for targets (e.g., sexual minorities) and nontargets (e.g., heterosexual employees) and further examine how employees and other stakeholders' evaluations help develop and maintain LGBTQ-supportive climate in organizations (see for example, Roberson, Ruggs, & Pichler, 2024). Survey-based data examining transgender employees' attitudes and behavioural intentions following a firm's adoption of transgender friendly policy or qualitative data on transgender and other minority employees' perceptions on certain diversity initiatives are worthy of future investigation.

Second, like previous studies examining the impact of external pressures on socially

desirable practices (e.g., increasing female directors on the board), this study doesn't measure leaders' perceptions towards external pressures directly (Knippen et al., 2019). Future research could rely on alternative research design such as interviewing corporate executives, experiments or collecting executives' perceptions on external pressures via survey to address the limitation. Third, the current paper pays attention to CEOs' ascriptive traits (i.e., gender and race) but ignores the influence of decision-makers' psychological traits, values, and beliefs. Prior literature has well documented that firms led by liberal-leaning CEOs are more likely than conservative-leaning CEOs to implement LGBT-friendly policies (Briscoe et al., 2014; Roumpi et al., 2020; Weng et al., 2023). Future research may investigate how firm leaders' political identifications interact with external pressures to influence the adoption of firm diversity policies, and how such relationship varied upon CEO ascriptive traits.

Furthermore, despite the inclusion of firm-fixed effects and a range of robustness checks, this paper should not be interpreted as causal relationship between variables studied given the absence of a randomized treatment design. Future research could employ field or lab experiments to infer firmer evidence of causation.

Finally, this paper focuses on a sample of the largest corporations in the United States based on annual revenues, which may limit the external validity of my findings to other contexts. HRC have already extended LGBTQ+ workplace diversity programs to some Latin American countries (e.g., Argentina, Brazil, Chile, Mexico). Stonewell also regularly publish the top 100 workplaces for LGBTQ+ inclusiveness in the UK. Given that the extent to which a country has a more inclusive attitude towards LGBTQ individuals and the extent

to which a country has a more equal climate for women and racial minority are different, it is reasonable to expect that the determinants of transgender-inclusive policy promotion and to what extent external pressures impact female and racial minority CEOs would be different for Chile and the UK. Future research could examine the determinants of transgender-inclusive policy adoption in a different and underexplored institutional context (e.g., the least developed, low- and middle-income countries).

REFERENCES

Adediran, A. O. (2023). Disclosing corporate diversity. *Virginia Law Review*, 109: 307-372.

Atcheson, S. (2020 November 11). You're Hiring A Diversity & Inclusion Leader - Here's How To Enable Success. *Forbes*. https://www.forbes.com/sites/shereeatcheson/2020/11/11/youre-hiring-a-diversity--inclusion-leaderheres-how-to-enable-success/

Beauregard, T. A., Arevshatian, L., Booth, J.E. & Whittle, S. (2018). Listen carefully, transgender voices in the workplace. *The International Journal of Human Resource Management*, 29: 857-884.

Berger, J. M. Fisek, H., Norman, R. Z., & Zelditch, M. J. (1977). *Status Characteristics and Social Interaction: An Expectation States Approach*. Elsevier, Amsterdam.

Billard, T. J. (2016). Writing in the margins: Mainstream news media representations of transgenderism. *International Journal of Communication*, 10: 4193-4218.

Boada-Cuerva, M., Trullen, J., & Valverde, M. (2019). Top management: the missing stakeholder in the HRM literature. *The International Journal of Human Resource Management*, 30(1): 63-95.

Bode, C., Rogan, M., & Singh, J. (2022). Up to no good? Gender, social impact work, and employee promotions. *Administrative Science Quarterly*, 67(1): 82-130.

Braun, S., Stegmann, S., Hernandez Bark, A. S., Junker, N. M., & van Dick, R. (2017). Think manager—think male, think follower—think female: Gender bias in implicit followership theories. *Journal of Applied Social Psychology*, 47(7): 377-388.

Briscoe, F., Chin, M. K., & Hambrick, D. C. (2014). CEO ideology as an element of the corporate opportunity structure for social activists. *Academy of Management Journal*, 57: 1786-1809.

Briscoe, F. & Sean, S. (2008). The Nixon-in-China effect: Activism, imitation, and the institutionalization of contentious practices. *Administrative Science Quarterly*, 53: 460-491.

Brodmann, J., Hossain, A., Al Masum, A., & Singhvi, M. (2021). Chief executive officer power and corporate sexual orientation equality. *Journal of Behavioral and Experimental Finance*, 31: 100543.

Brodmann, J., Hossain, A., & Singhvi, M. (2022). Chief executive officer power and board gender diversity. *Finance Research Letters*, 44: 102099.

Burbano, V. C. (2021). The demotivating effects of communicating a social-political stance: Field experimental evidence from an online labor market platform. *Management Science*, 67(2): 1004-1025.

Certo, S. T., Withers, M. C., & Semadeni, M. (2017). A tale of two effects: Using

longitudinal data to compare within-and between-firm effects. *Strategic Management Journal*, 38(7): 1536-1556.

Charlesworth, T. E., & Banaji, M. R. (2019). Patterns of implicit and explicit attitudes: I. Long-term change and stability from 2007 to 2016. *Psychological science*, 30(2): 174-192.

Chatterji, A. K., & Toffel, M. W. (2010). How firms respond to being rated. *Strategic Management Journal*, 31(9): 917-945.

Cheng, J. Y. J., & Roy, D. (2023). Towards Trans-Inclusive Workplaces: When Do Female Directors Matter?. In *Academy of Management Proceedings* (Vol. 2023, No. 1, p. 16500). Briarcliff Manor, NY 10510: Academy of Management.

Chuang, Y., Church, R., & Ophir, R. (2011). Taking sides: The interactive influences of institutional mechanisms on the adoption of same-sex partner health benefits by Fortune 500 corporations, 1990-2003. *Organization Science*, 22:190-209.

Chuang, Y. T., Church, R., & Hu, C. (2018). Effects of movements and opportunities on the adoption of same-sex partner health benefits by corporations. *Journal of Management*, 44(7): 2766-2800.

CNN. (2021 April 15). This record-breaking year for anti-transgender legislation would affect minors the most. Retrieved from: https://edition.cnn.com/2021/04/15/politics/anti-transgender-legislation-2021/index.html.

Collins, J. C., McFadden, C., Rocco, T. S., & Mathis, M. K. (2015). The problem of transgender marginalization and exclusion: Critical actions for human resource development. *Human Resource Development Review*, 14: 205-226.

Cook, A., & Glass, C. (2015). The power of one or power in numbers? Analyzing the effect of minority leaders on diversity policy and practice. *Work and Occupations*, 42(2): 183-215.

Cook, A., & Glass, C. (2016). Do women advance equity? The effect of gender leadership composition on LGBT-friendly policies in American firms. *Human Relations*, *69*(7), 1431-1456.

Dadanlar, H. H., & Abebe, M. A. (2020). Female CEO leadership and the likelihood of corporate diversity misconduct: Evidence from S&P 500 firms. *Journal of Business Research*, 118: 398-405.

Dietert, M., & Dentice, D. (2009). Gender identity issues and workplace discrimination: the transgender experience. *Journal of Workplace Rights*, 14(1): 121-140.

Dietrich, F., & Jabarian, B. (2022). Decision under normative uncertainty. *Economics & Philosophy*, 38(3): 372-394.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: institutional isomorphism

and collective rationality in organizational fields. *American Sociological Review*, 48: 147-160.

Dixon-Fyle, S., Dolan, K., Hunt, D. V., & Prince, S. (2020 May 19). Diversity wins: How inclusion matters. Retrieved from: https://www.weforum.org/agenda/2016/03/we-all-know-workplace-diversity-makes-sense-so-why-is-change-so-slow/

Dobbin, F., Kim, S., & Kalev, A. (2011). You can't always get what you need: Organizational determinants of diversity programs. *American Sociological Review*, 76(3): 386-411.

Doshi, A. R., Dowell, G. W., & Toffel, M. W. (2013). How firms respond to mandatory information disclosure. *Strategic Management Journal*, 34(10): 1209-1231.

Eagly, A. H. & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109: 573-598.

Ellingrud, K., Ellsworth, D., Madner, S., Musallam R., Sandhu, I., & Yee, L. (2023 January 30). Diversity, Equity and Inclusion Lighthouses 2023. McKinsey & Company. https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-equity-and-inclusion-lighthouses-2023.

Everly, B. A., & Schwarz, J. L. (2015). Predictors of the adoption of LGBT-friendly HR policies. *Human Resource Management*, 54: 367-384.

Fahim K (2007 July 21) Corzine enters dispute with United Parcel Service over who is a legal spouse. New York Times. Retrieved from: https://www.nytimes.com/2007/08/01/nyregion/01civil.html

Gardberg, N. A., Newburry, W., Hudson, B. A., & Viktora-Jones, M. (2023). Adoption of LGBT-Inclusive policies: social construction, coercion, or competition?. *Social Forces*, 101(3): 1116-1142.

Glass, C., & Cook, A. (2016). Leading at the top: Understanding women's challenges above the glass ceiling. *The Leadership Quarterly, 27*(1): 51-63.

Glass, C., & Cook, A. (2018). Do women leaders promote positive change? Analyzing the effect of gender on business practices and diversity initiatives. *Human Resource Management, 57*(4): 823-837.

Gligor, D. M., Novicevic, M., Feizabadi, J., & Stapleton, A. (2021). Examining investor reactions to appointments of Black top management executives and CEOs. *Strategic Management Journal*, 42: 1939-1959.

Gonsalves, L. (2023). When do firms crack under pressure? Legal professionals, negative role models, and organizational misconduct. *Organization Science*, 34(2): 754-776.

Granberg, M., Andersson, P.A., & Ahmed, A. (2020). Hiring discrimination against transgender people: Evidence from a field experiment. *Labour Economics*, 65,

101860.

Gupta, V. K., Han, S., Mortal, S. C., Silveri, S. D., & Turban, D.B. (2018). Do women CEOs face greater threat of shareholder activism compared with male CEOs? A role congruity perspective. *Journal of Applied Psychology*, 103: 228-236.

Hambrick, D. C., & Wowak, A. J. (2021). CEO sociopolitical activism: A stakeholder alignment model. *Academy of Management Review*, *46*(1): 33-59.

Haunschild, P. R. & Miner, A. S. (1997). Modes of interorganizational imitation: the effects of outcome salience and uncertainty. *Administrative Science Quarterly*, 42: 472-500.

Haveman, H. A. (1993). Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38(4): 593-627.

Hekman, D. R., Johnson, S. K., Foo, M. & Yang, W. (2017). Does diversity-valuing behavior result in diminished performance ratings for non-white and female leaders? *Academy of Management Journal*, 60: 771-797.

Heugens, P. M. A. R., & Lander, M. W. (2009). Structure! Agency! (And other quarrels): A meta-analysis of institutional theories of organization. *Academy of Management Journal*, 53(1): 61-85.

Human Rights Campaign. (2020). Corporate Equality Index 2020. Retrieved from: https://hrc-prod-requests.s3-us-west-2.amazonaws.com/CEI-2020.pdf?mtime=20200806234745&focal=none.

Human Rights Campaign. (2021). Fatal violence against the transgender and gender non-conforming community in 2021. Retrieved from: https://www.hrc.org/resources/fatal-violence-against-the-transgender-and-gender-non-conforming-community-in-2021.

Jackson, I. (2024, January 5). Will diversity and inclusion fall down business agendas in 2024?. *People Management*. https://www.peoplemanagement.co.uk/article/1856569/will-diversity-inclusion-fall-down-business-agendas-2024

Jackson, F., & Smith, M. (2006). Absolutist moral theories and uncertainty. *The Journal of Philosophy*, 103(6): 267-283.

Jayne, M. E., & Dipboye, R. L. (2004). Leveraging diversity to improve business performance: Research findings and recommendations for organizations. *Human Resource Management*, 43(4): 409-424.

Kanter, R. M. (1977). *Men and Women of the Corporation*: New York: Basic Books.

Kelan, E.K., & Wratil, P. (2018). Post-Heroic leadership, tempered radicalism and senior leaders as change agents for gender equality. *European Management Review*, 15: 5-18.

Knippen, J. M., Shen, W., & Zhu, Q. (2019). Limited progress? The effect of external

pressure for board gender diversity on the increase of female directors. *Strategic Management Journal*, 40(7): 1123-1150.

Lee, P.M., & James, E.H. (2007). She'-e-os: gender effects and investor reactions to the announcements of top executive appointment. *Strategic Management Journal*, 28: 227-241.

Leslie, L. M. (2019). Diversity initiative effectiveness: A typological theory of unintended consequences. *Academy of Management Review*, 44(3): 538-563.

Li, F., & Nagar, V. (2013). Diversity and performance. *Management Science*, 59(3): 529-544.

Lockhart, T. (2000). *Moral uncertainty and its consequences*. Oxford University Press.

Mah, J., Kolev, K. D., McNamara, G., Pan, L., & Devers, C. E. (2023). Women in the C-Suite: A review of predictors, Experiences, and Outcomes. *Academy of Management Annals*, 17(2): 586-625.

Martins, L. L. (2020). Strategic diversity leadership: The role of senior leaders in delivering the diversity dividend. *Journal of Management*, 46(7): 1191-1204.

Naumovska, I., Wernicke, G., & Zajac, E. J. (2020). Last to come and last to go? The complex role of gender and ethnicity in the reputational penalties for directors linked to corporate fraud. *Academy of Management Journal*, *63*(3): 881-902.

Ng, E. S., & Sears, G. J. (2012). CEO leadership styles and the implementation of organizational diversity practices: Moderating effects of social values and age. *Journal of Business Ethics*, 105: 41-52.

Ng, E. S., & Sears, G. J. (2020). Walking the talk on diversity: CEO beliefs, moral values, and the implementation of workplace diversity practices. *Journal of Business Ethics*, 164(3): 437-450.

Nissan-Rozen, I. (2015). Against moral hedging. *Economics & Philosophy*, 31(3): 349-369.

Nilsen, T. (2016 March 14). We all know workplace diversity makes sense: so why is change so slow? Retrieved from: https://www.weforum.org/agenda/2016/03/we-all-know-workplace-diversity-makes-sense-so-why-is-change-so-slow/

Pew Research Center. (2017). Republicans, Democrats have starkly different views on transgender issues. Retrieved from: https://www.pewresearch.org/short-reads/2017/11/08/transgender-issues-divide-republicans-and-democrats/

Pew Research Center. (2022). Americans' Complex Views on Gender Identity and Transgender Issues. Retrieved from: https://www.pewresearch.org/social-trends/2022/06/28/americans-complex-views-on-gender-identity-and-transgender-issues/

Park, S. H., & Westphal, J. D. (2013). Social discrimination in the corporate elite: How status affects the propensity for minority CEOs to receive blame for low firm performance. *Administrative Science Quarterly*, 58(4): 542-586.

Ray, V., & Melaku, T. M. (2023). Countering the corporate diversity backlash. *MIT Sloan Management Review*, *64*(4): 1-3.

Ridgeway, C. L. (2001). Gender, status, and leadership. *Journal of Social Issues*, 57(4): 637-655.

Roberson, Q., Ruggs, E. N., Pichler, S., & Holmes IV, O. (2024). LGBTQ systems: A framework and future research agenda. *Journal of Management***,** 50(3): 1145-1173.

Robinson, M. J., Van Esch, C., & Bilimoria, D. (2017). Bringing transgender issues into management education: a call to action. *Academy of Management Learning & Education*, 16(2): 300-313.

Roumpi, D., Giannkis, P., & Delery, J. E. (2020). Adoption of LGBT-friendly practices: The effect of institutional pressures and strategic choice. *Human Resource Management Journal*, 30: 604-623.

Samdanis, M., & Özbilgin, M. (2020). The duality of an atypical leader in diversity management: The legitimization and delegitimization of diversity beliefs in organizations. *International Journal of Management Reviews*, 22: 101-119.

Scott, W. R. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32: 493-511.

Scott, W. R. (2001). *Institutions and Organizations*. Sage, Thousand Oaks, CA.

Shi, W., Pathak, S., Song, L. J., & Hoskisson, R. E. (2018). The adoption of chief diversity officers among S&P 500 firms: Institutional, resource dependence, and upper echelons accounts. *Human Resource Management*, 57(1): 83-96.

Solal, I., & Snellman, K. (2019). Women don't mean business? Gender penalty in board composition. *Organization Science*, 30 (6): 1270-1288.

Stainback, K., Robinson, C. L., & Tomaskovic-Devey, D. (2005). Race and workplace integration: A politically mediated process?. *American Behavioral Scientist*, *48*(9): 1200-1228.

Stainback, K., Tomaskovic-Devey, D., & Skaggs, S. (2010). Organizational approaches to inequality: Inertia, relative power, and environments. *Annual Review of Sociology*, 36: 225-247.

Tausanovitch, C., & Warshaw, C. (2013). Measuring constituent policy preferences in congress, state legislatures, and cities. *The Journal of Politics*, 75(2): 330-342.

Terjesen, S. and Sealy, R. (2016) 'Board Gender Quotas: Exploring Ethical Tensions from a Multi-Theoretical Perspective', *Business Ethics Quarterly*, 26(1): 23–65.

Thoroughgood, C. N., Sawyer, K. B., & Webster, J. R. (2020). Creating a trans-inclusive workplace. *Harvard Business Review*, *98*(2): 114-123.

Ubaka, A., Lu, X., & Gutierrez, L. (2023). Testing the generalizability of the white leadership standard in the post-Obama era. *The Leadership Quarterly*, *34*(4): 101591.

Ursel, N., Durante, A., & Elsaid, E. (2023). Ethnic minority CEO turnover: Resource-based and leadership categorization perspectives. *Journal of Organizational Behavior*, 44(4): 682-699.

Vial, A. C., Napier, J. L., & Brescoll, V. L. (2016). A bed of thorns: Female leaders and the self-reinforcing cycle of illegitimacy. *The Leadership Quarterly*, 27(3), 400-414.

Villamor, I., & Aguinis, H. (2024). Think star, think men? Implicit star performer theories. *Journal of Organizational Behavior*.

Wang, P., & Schwarz, J. L. (2010). Stock price reactions to GLBT nondiscrimination policies. *Human Resource Management*, 49: 195-216.

Watkins, M. B., Simmons, A., & Umphress, E. (2019). It's not black and white: Toward a contingency perspective on the consequences of being a token. *Academy of Management Perspectives*, 33(3): 334–365.

Weatherson, B. (2014). Running risks morally. *Philosophical Studies*, 167: 141-163.

Weng, D. H., Chuang, Y. T., Zhang, C., & Church, R. (2023). CEO political liberalism, stakeholders, and firms' support for LGBT employees. *The Leadership Quarterly*, 34(3): 101645.

Wernicke, G., Sajko, M., & Boone, C. (2022). How much influence do CEOs have on company actions and outcomes? The example of corporate social responsibility. *Academy of Management Discoveries***,** 8(1): 36-55.

Zhang, Y., Mooney, A., & Ozgen, S. (2024). Racial minorities in strategic leadership: An integrative literature review and future research roadmap. *The Leadership Quarterly*, 101840.

TABLES and FIGURES

Table 1. Descriptive Statistics and Correlations

Variables	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Female CEO	0.051	0.219	1.000												
(2) Racial minority CEO	0.057	0.232	0.037*	1.000											
(3) Perfect Trans Benefit	0.43	0.495	0.088*	0.077*	1.000										
(4) Normative pressure	-0.012	0.133	-0.045*	-0.076*	-0.293*	1.000									
(5) Coercive pressure	.371	.483	0.000	0.085*	0.183*	-0.573*	1.000								
(6) Geolocation peers receiving high CEI	4.121	9.189	-0.025	-0.017	0.331*	-0.324*	-0.081*	1.000							
(7) Industry peers receiving high CEI	7.895	9.434	0.100*	0.094*	0.604*	-0.223*	0.105*	0.344*	1.000						
(8) Industry peers receiving low CEI	1.879	3.628	-0.069*	-0.051*	-0.493*	0.214*	-0.139*	-0.232*	-0.433*	1.000					
(9) Tobin's Q	.449	.452	-0.005	0.127*	0.123*	-0.129*	0.183*	0.010	0.099*	-0.134*	1.000				
(10) Firm size	9.727	1.424	0.018	0.007	0.363*	-0.135*	0.017	0.235*	0.299*	-0.184*	-0.148*	1.000			
(11) Firm age	3.956	.874	0.031*	-0.028*	0.098*	0.012	-0.068*	0.081*	0.053*	-0.045*	-0.056*	0.125*	1.000		
(12) Leverage	-1.41	.948	-0.026	0.002	-0.067*	0.080*	-0.030*	-0.069*	-0.188*	0.053*	0.06	-0.074*	-0.093*	1.000	
(13) Financial slack	.108	.113	-0.011	0.166*	0.137*	-0.202*	0.180*	0.053*	0.158*	-0.145*	0.283*	-0.022	-0.069*	-0.176*	1.000

Variables	Mean	S.D.	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	
(14) Innovation intensity	0.013	0.034	1.000												
(15) Marketing intensity	0.011	0.027	0.067*	1.000											
(16) Capital	0.041	0.047	0.011	0.047*	1.000										

intensity														
(17) Employee	3.195	1.254	0.039*	0.135*	0.015	1.000								
(18) ROA	0.051	0.08	0.176*	0.147*	0.077*	0.134*	1.000							
(19) CEO tenure	6.993	6.544	-0.006	0.015	-0.018	0.054*	0.041*	1.000						
(20) CEO age	57.274	6.566	-0.158*	-0.035*	-0.029*	0.075*	0.012	0.460*	1.000					
(21) CEO-Chairman duality	0.507	0.5	0.003	-0.047*	-0.006	0.172*	-0.002	0.275*	0.265*	1.000				
(22) MBA degree	0.401	0.49	-0.012	-0.091*	-0.052*	-0.048*	-0.048*	-0.040*	-0.041*	-0.014	1.000			
(23) Law degree	0.074	0.262	-0.067*	-0.020	-0.059*	-0.009	-0.023	0.011	0.020	0.038*	-0.164*	1.000		
(24) Corporate Governance quality	0.784	0.176	0.064*	-0.014	0.060*	0.123*	0.063*	-0.079*	-0.007	0.065*	0.063*	0.024	1.000	
(25) Social performance	0.639	0.262	0.176*	0.046*	0.055*	0.276*	0.086*	-0.122*	-0.010	0.142*	0.075*	0.012	0.534*	1.000

Note: * $p < 0.05$

Table 2. Random-Effects Logit Models Predicting Comprehensive Transgender-inclusive Healthcare Benefits by Female CEOs

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tobin's Q	1.160**	1.160**	1.045*	1.153*	1.037*	0.950*	1.000*	0.744†
	(0.444)	(0.444)	(0.447)	(0.448)	(0.444)	(0.405)	(0.407)	(0.393)
Firm size	1.672***	1.664***	1.652***	1.684***	1.592***	1.443***	1.380***	1.268***
	(0.248)	(0.246)	(0.249)	(0.247)	(0.241)	(0.221)	(0.217)	(0.208)
Firm age	0.147	0.153	0.143	0.177	0.174	0.117	0.0932	0.109
	(0.246)	(0.246)	(0.248)	(0.250)	(0.247)	(0.219)	(0.223)	(0.215)
Leverage	-0.0701	-0.0686	-0.0846	-0.0770	-0.0529	-0.00775	-0.0813	-0.0610
	(0.165)	(0.165)	(0.169)	(0.165)	(0.170)	(0.159)	(0.155)	(0.155)
Financial slack	3.676*	3.681*	3.763*	3.772*	3.516*	3.302*	3.015*	2.842*
	(1.537)	(1.535)	(1.547)	(1.545)	(1.541)	(1.456)	(1.468)	(1.442)
Innovation intensity	13.16†	12.90†	11.34	11.81	12.65†	9.522	9.611	6.554
	(7.224)	(7.269)	(7.562)	(7.625)	(7.120)	(6.537)	(6.503)	(6.622)
Marketing intensity	16.95*	16.87*	16.96*	17.31*	15.50*	16.09*	14.22*	13.94*
	(7.430)	(7.399)	(7.458)	(7.539)	(7.223)	(6.692)	(6.528)	(6.335)
Capital intensity	-2.181	-2.304	-1.925	-1.859	-2.438	-2.751	-3.075	-2.610
	(3.304)	(3.310)	(3.196)	(3.235)	(3.320)	(3.079)	(3.251)	(2.965)
Employee	0.983***	0.978***	0.969***	0.968***	0.908***	0.903***	0.819***	0.755***
	(0.253)	(0.253)	(0.252)	(0.252)	(0.249)	(0.231)	(0.224)	(0.209)
ROA	-2.778*	-2.770*	-2.830*	-2.754*	-2.781*	-2.812*	-2.612*	-2.686*
	(1.211)	(1.213)	(1.221)	(1.220)	(1.216)	(1.185)	(1.196)	(1.191)
CEO tenure	-0.0418	-0.0401	-0.0377	-0.0400	-0.0394	-0.0318	-0.0337	-0.0306
	(0.0292)	(0.0292)	(0.0287)	(0.0291)	(0.0286)	(0.0267)	(0.0268)	(0.0249)
CEO age	0.0244	0.0238	0.0193	0.0222	0.0234	0.0157	0.0154	0.00798
	(0.0275)	(0.0275)	(0.0275)	(0.0276)	(0.0271)	(0.0258)	(0.0255)	(0.0246)
CEO-Chairman duality	0.440	0.449	0.431	0.427	0.424	0.431	0.351	0.319
	(0.315)	(0.313)	(0.311)	(0.313)	(0.308)	(0.291)	(0.287)	(0.272)
MBA degree	0.313	0.297	0.318	0.359	0.321	0.314	0.200	0.280
	(0.275)	(0.273)	(0.274)	(0.277)	(0.273)	(0.262)	(0.257)	(0.253)
Law degree	0.148	0.130	0.191	0.173	0.0544	0.141	0.140	0.196
	(0.497)	(0.503)	(0.473)	(0.495)	(0.499)	(0.434)	(0.441)	(0.399)
Corporate governance quality	-1.120	-1.134	-1.175	-1.136	-1.107	-1.003	-1.015	-0.983
	(0.880)	(0.878)	(0.868)	(0.882)	(0.876)	(0.839)	(0.824)	(0.806)
Social performance	2.770***	2.781***	2.707***	2.703**	2.761***	2.619***	2.515***	2.368**
	(0.827)	(0.822)	(0.820)	(0.826)	(0.806)	(0.766)	(0.762)	(0.732)
Female CEO		0.530	0.462	-0.455	-0.0329	1.403*	0.698	0.835
		(0.892)	(0.897)	(1.035)	(0.943)	(0.715)	(0.880)	(1.099)
Normative pressure			-4.364*					-3.889
			(2.220)					(2.117)
Female CEO × Normative pressure			-20.07**					-14.30†
			(6.814)					(7.416)
Coercive				0.0512				-0.255

pressure								
				(0.442)				(0.403)
Female CEO × Coercive pressure				3.681**				1.178
				(1.339)				(1.458)
Geolocation peers receiving high CEI					0.0618**			0.0197
					(0.0217)			(0.0200)
Female CEO × Geolocation peers receiving high CEI					0.294†			0.332
					(0.152)			(0.232)
Industry peers receiving high CEI						0.0832***		0.0526***
						(0.0141)		(0.0142)
Female CEO × Industry peers receiving high CEI						-0.0865		-0.116
						(0.0744)		(0.0791)
Industry peers receiving low CEI							-0.420***	-0.344***
							(0.0801)	(0.0745)
Female CEO × Industry peers receiving low CEI							-0.866*	-1.830†
							(0.424)	(0.958)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y	Y	Y
Constant	-22.67***	-22.53***	-21.49***	-22.74***	-21.72***	-19.56***	-17.98***	-16.06***
	(3.401)	(3.367)	(3.357)	(3.388)	(3.328)	(3.040)	(2.940)	(2.777)
N	4105	4105	4105	4105	4105	4105	4105	4105
Log pseudolikelihood	-1265.6767	-1265.2411	-1256.8523	-1260.8	-1253.8323	-1243.4294	-1231.1749	-1206.0794

Note: Robust standard errors clustered at firm level in parentheses

$^{\dagger}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Table 3. Random-Effects Logit Models Predicting Comprehensive Transgender-inclusive Healthcare Benefits by Racial Minority CEOs

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female CEO	0.529	0.593	0.544	0.605	0.545	0.499	0.526
	(0.892)	(0.883)	(0.882)	(0.859)	(0.815)	(0.799)	(0.735)
Tobin's Q	1.159**	1.101*	1.149**	1.012*	0.938*	1.006*	0.737†
	(0.445)	(0.444)	(0.444)	(0.441)	(0.408)	(0.410)	(0.392)
Firm size	1.663***	1.604***	1.669***	1.564***	1.448***	1.374***	1.216***
	(0.246)	(0.250)	(0.246)	(0.240)	(0.224)	(0.217)	(0.209)
Firm age	0.153	0.174	0.160	0.150	0.128	0.0847	0.107
	(0.246)	(0.247)	(0.247)	(0.238)	(0.219)	(0.223)	(0.208)
Leverage	-0.0685	-0.0796	-0.0707	-0.0487	-0.0171	-0.0760	-0.0523
	(0.165)	(0.166)	(0.165)	(0.170)	(0.158)	(0.155)	(0.154)
Financial slack	3.675*	3.595*	3.648*	3.483*	3.347*	3.052*	2.779*
	(1.543)	(1.525)	(1.534)	(1.544)	(1.460)	(1.477)	(1.411)
Innovation intensity	12.86†	12.59†	13.17†	12.45	9.359	9.413	7.864
	(7.275)	(7.092)	(7.319)	(6.977)	(6.665)	(6.465)	(6.060)
Marketing intensity	16.87*	16.37*	16.89*	15.24*	15.92*	14.28*	12.91*
	(7.397)	(7.460)	(7.369)	(7.247)	(6.626)	(6.531)	(6.199)
Capital intensity	-2.301	-2.080	-2.500	-2.603	-2.468	-2.866	-2.611
	(3.302)	(3.247)	(3.369)	(3.303)	(3.051)	(3.216)	(2.993)
Employee	0.977***	1.001***	0.969***	0.908***	0.898***	0.822***	0.773***
	(0.252)	(0.251)	(0.252)	(0.247)	(0.230)	(0.223)	(0.210)
ROA	-2.771*	-2.839*	-2.793*	-2.822*	-2.852*	-2.599*	-2.798*
	(1.212)	(1.217)	(1.213)	(1.220)	(1.176)	(1.194)	(1.172)
CEO tenure	-0.0401	-0.0370	-0.0386	-0.0356	-0.0337	-0.0334	-0.0268
	(0.0291)	(0.0291)	(0.0292)	(0.0284)	(0.0265)	(0.0266)	(0.0248)
CEO age	0.0239	0.0204	0.0222	0.0216	0.0198	0.0162	0.0114
	(0.0276)	(0.0278)	(0.0278)	(0.0270)	(0.0258)	(0.0254)	(0.0244)
CEO-Chairman duality	0.449	0.451	0.458	0.421	0.404	0.351	0.323
	(0.313)	(0.311)	(0.312)	(0.308)	(0.293)	(0.287)	(0.276)
MBA degree	0.297	0.274	0.267	0.309	0.316	0.215	0.227
	(0.273)	(0.274)	(0.274)	(0.271)	(0.262)	(0.257)	(0.249)
Law degree	0.130	0.0923	0.0956	0.0479	0.0982	0.159	0.0492
	(0.503)	(0.501)	(0.503)	(0.491)	(0.451)	(0.438)	(0.411)
Corporate governance quality	-1.136	-1.153	-1.123	-1.113	-0.961	-1.000	-0.911
	(0.878)	(0.874)	(0.880)	(0.874)	(0.836)	(0.824)	(0.805)
Social performance	2.781***	2.852***	2.803***	2.782***	2.556***	2.504**	2.424***
	(0.823)	(0.823)	(0.823)	(0.802)	(0.760)	(0.762)	(0.724)
Racial minority CEO	0.0394	0.189	0.925	0.0309	-0.606	0.0709	0.172
	(0.715)	(0.777)	(1.248)	(0.713)	(0.909)	(0.697)	(1.464)
Normative pressure		-5.169*					-4.340*
		(2.245)					(2.107)
Racial minority CEO ×		3.831					0.793

Normative pressure							
		(6.133)					(8.269)
Coercive pressure			0.261				-0.140
			(0.437)				(0.394)
Racial minority CEO × Coercive pressure			-1.493				-1.865
			(1.479)				(1.881)
Geolocation peers receiving high CEI				0.0665**			0.0244
				(0.0216)			(0.0197)
Racial minority CEO × Geolocation peers receiving high CEI				0.0320			0.00624
				(0.0613)			(0.0747)
Industry peers receiving high CEI					0.0778***		0.0482***
					(0.0134)		(0.0140)
Racial minority CEO × Industry peers receiving high CEI					0.0850		0.116†
					(0.0648)		(0.0598)
Industry peers receiving low CEI						-0.443***	-0.363***
						(0.0881)	(0.0807)
Racial minority CEO × Industry peers receiving low CEI						0.148	0.210
						(0.169)	(0.143)
Year FE	Y	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y	Y
Constant	-22.53***	-21.43***	-22.44***	-21.23***	-19.83***	-17.96***	-15.81***
	(3.370)	(3.372)	(3.369)	(3.283)	(3.086)	(2.947)	(2.799)
N	4105	4105	4105	4105	4105	4105	4105
Log pseudolikelihood	-1265.2392	-1262.4447	-1264.2766	-1256.3152	-1243.8555	-1231.8011	-1214.5121

Note: Robust standard errors clustered at firm level in parentheses

†$p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4. Random-Effects Logit Models Predicting Comprehensive Transgender-inclusive Healthcare Benefits by Demographic Minority CEOs: Both Female CEOs and Racial Minority CEOs

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)
Female CEO	0.476	-0.455	-0.0340	1.365†	0.697
	(0.897)	(1.040)	(0.944)	(0.702)	(0.881)
Racial minority CEO	0.124	0.913	0.0792	-0.587	0.0656
	(0.772)	(1.247)	(0.716)	(0.902)	(0.695)
Tobin's Q	1.058*	1.138*	1.036*	0.928*	1.000*
	(0.446)	(0.449)	(0.445)	(0.408)	(0.409)
Firm size	1.649***	1.685***	1.591***	1.452***	1.373***
	(0.249)	(0.246)	(0.242)	(0.222)	(0.217)
Firm age	0.146	0.177	0.174	0.124	0.0901
	(0.249)	(0.250)	(0.247)	(0.219)	(0.223)
Leverage	-0.0791	-0.0779	-0.0521	-0.0166	-0.0791
	(0.168)	(0.164)	(0.170)	(0.160)	(0.155)
Financial slack	3.720*	3.725*	3.510*	3.325*	2.987*
	(1.531)	(1.542)	(1.551)	(1.466)	(1.474)
Innovation intensity	11.60	12.13	12.59†	9.177	9.494
	(7.446)	(7.604)	(7.124)	(6.647)	(6.486)
Marketing intensity	16.96*	17.28*	15.49*	16.06*	14.21*
	(7.508)	(7.511)	(7.225)	(6.642)	(6.521)
Capital intensity	-2.080	-2.046	-2.438	-2.599	-3.043
	(3.244)	(3.299)	(3.316)	(3.055)	(3.245)
Employee	0.973***	0.957***	0.908***	0.903***	0.819***
	(0.252)	(0.251)	(0.248)	(0.229)	(0.223)
ROA	-2.833*	-2.789*	-2.781*	-2.839*	-2.607*
	(1.223)	(1.220)	(1.216)	(1.182)	(1.195)
CEO tenure	-0.0359	-0.0389	-0.0393	-0.0314	-0.0341
	(0.0288)	(0.0291)	(0.0285)	(0.0267)	(0.0267)
CEO age	0.0175	0.0210	0.0236	0.0170	0.0161
	(0.0279)	(0.0278)	(0.0272)	(0.0259)	(0.0255)
CEO-Chairman duality	0.429	0.435	0.424	0.399	0.359
	(0.312)	(0.314)	(0.308)	(0.293)	(0.287)
MBA degree	0.302	0.338	0.321	0.320	0.205
	(0.276)	(0.277)	(0.273)	(0.262)	(0.257)
Law degree	0.185	0.149	0.0547	0.135	0.148
	(0.475)	(0.494)	(0.500)	(0.433)	(0.441)
Corporate governance quality	-1.173	-1.123	-1.110	-0.980	-1.024
	(0.873)	(0.884)	(0.877)	(0.842)	(0.826)
Social performance	2.766***	2.728***	2.762***	2.589***	2.511***
	(0.827)	(0.826)	(0.807)	(0.767)	(0.760)
Normative pressure	-4.638*				
	(2.253)				
Female CEO × Normative pressure	-20.42**				
	(6.925)				
Racial minority CEO × Normative pressure	4.902				
	(6.121)				
Coercive pressure		0.106			
		(0.444)			
Female CEO × Coercive pressure		3.613**			
		(1.387)			

Racial minority CEO × Coercive pressure		-1.397			
		(1.473)			
Geolocation peers receiving high CEI			0.0619**		
			(0.0219)		
Female CEO × Geolocation peers receiving high CEI			0.295†		
			(0.152)		
Racial minority CEO × Geolocation peers receiving high CEI			-0.00655		
			(0.0852)		
Industry peers receiving high CEI				0.0808***	
				(0.0141)	
Female CEO × Industry peers receiving high CEI				-0.0877	
				(0.0732)	
Racial minority CEO × Industry peers receiving high CEI				0.0866	
				(0.0656)	
Industry peers receiving low CEI					-0.434***
					(0.0872)
Female CEO × Industry peers receiving low CEI					-0.855*
					(0.426)
Racial minority CEO × Industry peers receiving low CEI					0.139
					(0.168)
Year FE	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y
Constant	-21.41***	-22.64***	-21.71***	-19.75***	-17.91***
	(3.370)	(3.387)	(3.332)	(3.067)	(2.944)
N	4105	4105	4105	4105	4105
Log pseudolikelihood	-1256.2786	-1260.0371	-1253.8239	-1242.2124	-1230.8653

Note: Robust standard errors clustered at firm level in parentheses

†$p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5. Suggestive Evidence of Proposed Mechanism

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female CEO	-2.179	0.465	-2.600*	-0.268	-1.515	0.302	-1.932†	0.837
	(1.333)	(0.900)	(1.226)	(0.961)	(1.172)	(0.928)	(1.159)	(0.861)
Normative pressure	-0.939	-6.205*						
	(2.780)	(2.940)						
Female CEO × Normative pressure	-13.28	-21.14*						
	(10.49)	(9.558)						
Coercive pressure			0.904	-0.0211				
			(0.724)	(0.625)				
Female CEO × Coercive pressure			1.899	5.160**				
			(2.307)	(1.931)				
Geolocation peers receiving high CEI					0.0430†	0.104**		
					(0.0230)	(0.0327)		
Female CEO × Geolocation peers receiving high CEI					-0.0461	0.162†		
					(0.0737)	(0.0833)		
Industry peers receiving low CEI							-0.310	-0.387***
							(0.322)	(0.0850)
Female CEO × Industry peers receiving low CEI							0.785	-1.066**
							(0.733)	(0.405)
Tobin's Q	-0.0749	0.925	0.0389	1.066†	-0.0727	0.827	0.0389	0.955*
	(1.464)	(0.569)	(1.437)	(0.566)	(1.423)	(0.551)	(1.491)	(0.482)
Firm size	-0.338	1.595***	-0.289	1.627***	-0.361	1.444***	-0.415	1.619***
	(0.302)	(0.310)	(0.307)	(0.302)	(0.291)	(0.288)	(0.298)	(0.252)
Firm age	0.176	0.0569	0.237	0.0799	0.267	0.0494	0.236	0.0868
	(0.430)	(0.298)	(0.440)	(0.299)	(0.404)	(0.293)	(0.435)	(0.253)
Leverage	-0.00373	-0.152	-0.0526	-0.140	0.0493	-0.109	-0.0184	-0.0789
	(0.393)	(0.208)	(0.417)	(0.201)	(0.378)	(0.229)	(0.407)	(0.175)
Financial slack	7.788*	2.872	7.980*	3.000	6.938*	2.295	7.483*	3.431*
	(3.326)	(1.895)	(3.373)	(1.895)	(3.430)	(1.939)	(3.550)	(1.648)
Innovation intensity	13.14	14.49	10.99	14.05	14.01	15.26†	13.52	16.14*
	(13.12)	(9.059)	(10.36)	(9.270)	(13.51)	(8.432)	(13.05)	(7.780)
Marketing intensity	4.537	16.66†	4.631	16.84†	4.877	13.84	3.269	17.41*
	(7.998)	(9.029)	(7.824)	(8.925)	(7.193)	(8.688)	(7.338)	(7.696)

Capital intensity	-4.819	0.771	-6.188*	0.436	-5.823*	0.410	-6.066*	-4.415
	(2.979)	(3.487)	(3.147)	(3.449)	(2.929)	(3.489)	(3.012)	(3.698)
Employee	0.909†	1.047***	0.920†	1.023***	0.898†	0.984***	1.043*	1.006***
	(0.496)	(0.304)	(0.496)	(0.299)	(0.491)	(0.286)	(0.503)	(0.255)
ROA	1.202	-1.545	1.688	-1.489	1.563	-1.622	1.676	-1.944
	(1.250)	(1.349)	(1.332)	(1.339)	(1.225)	(1.290)	(1.262)	(1.250)
CEO tenure	-0.0373	-0.0361	-0.0259	-0.0375	-0.0366	-0.0319	-0.0335	-0.0525†
	(0.0664)	(0.0391)	(0.0698)	(0.0391)	(0.0619)	(0.0387)	(0.0673)	(0.0313)
CEO age	0.00705	0.00155	-0.00527	0.00696	0.00397	0.00491	0.00188	0.0115
	(0.0581)	(0.0378)	(0.0575)	(0.0377)	(0.0591)	(0.0378)	(0.0585)	(0.0291)
CEO-Chairman duality	0.0743	0.103	0.0765	0.0790	0.0257	0.0378	0.102	0.242
	(0.601)	(0.363)	(0.616)	(0.361)	(0.588)	(0.350)	(0.595)	(0.309)
MBA degree	0.408	-0.107	0.294	-0.0503	0.394	-0.0476	0.334	0.230
	(0.600)	(0.358)	(0.624)	(0.355)	(0.583)	(0.357)	(0.597)	(0.304)
Law degree	-1.535	0.102	-1.649	0.112	-1.724†	-0.0245	-1.745†	0.265
	(1.033)	(0.485)	(1.062)	(0.525)	(0.966)	(0.522)	(1.040)	(0.493)
Corporate governance quality	-2.877	-2.751**	-2.288	-2.702*	-2.694	-2.628*	-2.591	-1.107
	(2.228)	(1.066)	(2.168)	(1.064)	(2.170)	(1.063)	(2.244)	(0.914)
Social performance	-0.859	2.367*	-1.065	2.267*	-0.784	2.348*	-1.206	2.678**
	(1.582)	(1.003)	(1.605)	(0.998)	(1.546)	(0.972)	(1.602)	(0.828)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y	Y	Y
Constant	-1.956	-15.11***	-4.003	-16.46***	-2.226	-14.41***	-1.712	-20.79***
	(5.167)	(3.855)	(5.369)	(3.880)	(4.956)	(3.790)	(5.053)	(3.439)
N	581	3001	581	3001	581	3001	581	4105
Log pseudolikelihood	-210.11222	-977.67163	-209.35618	-981.73281	-209.48317	-970.24281	-210.58683	-1159.965

Note: Robust standard errors clustered at firm level in parentheses

†$p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1. The Interactive Effect between CEO Gender and Normative Pressure

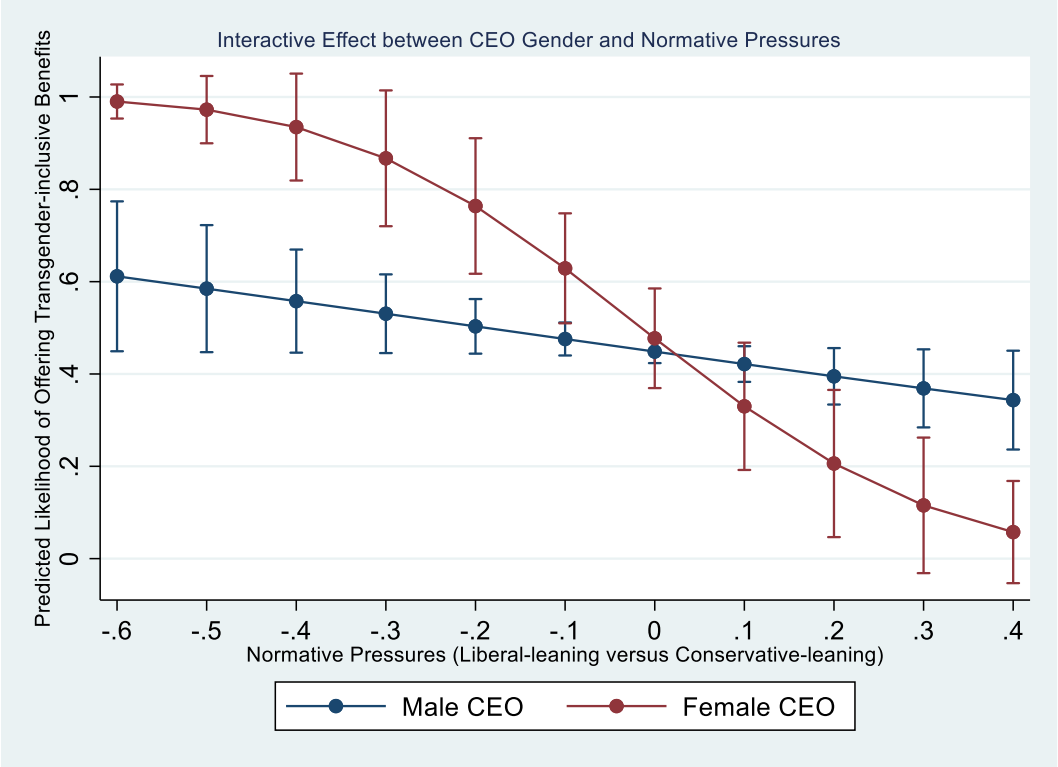


Figure 2. The Interactive Effect between CEO Gender and Coercive pressure

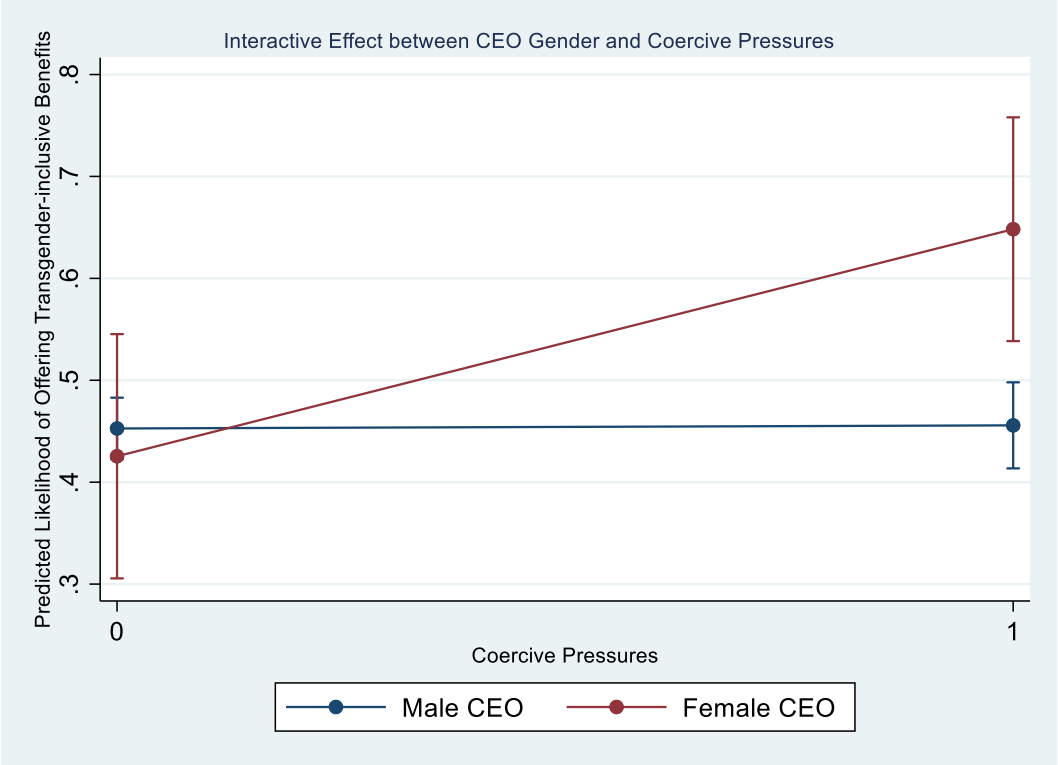


Figure 3. The Interactive Effect between CEO Gender and Mimetic pressure

Figure 3.1. The Interactive Effect between CEO Gender and Geolocation Peers Receiving High CEI

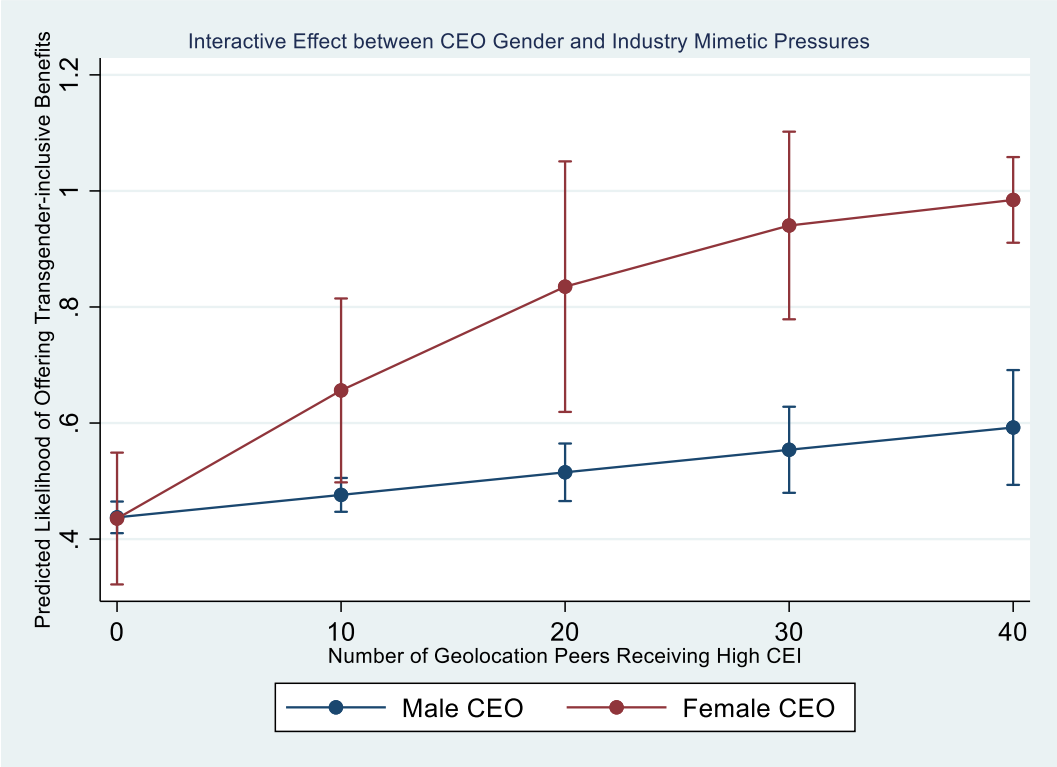


Figure 3.2. The Interactive Effect between CEO Gender and Industry Peers Receiving Low CEI

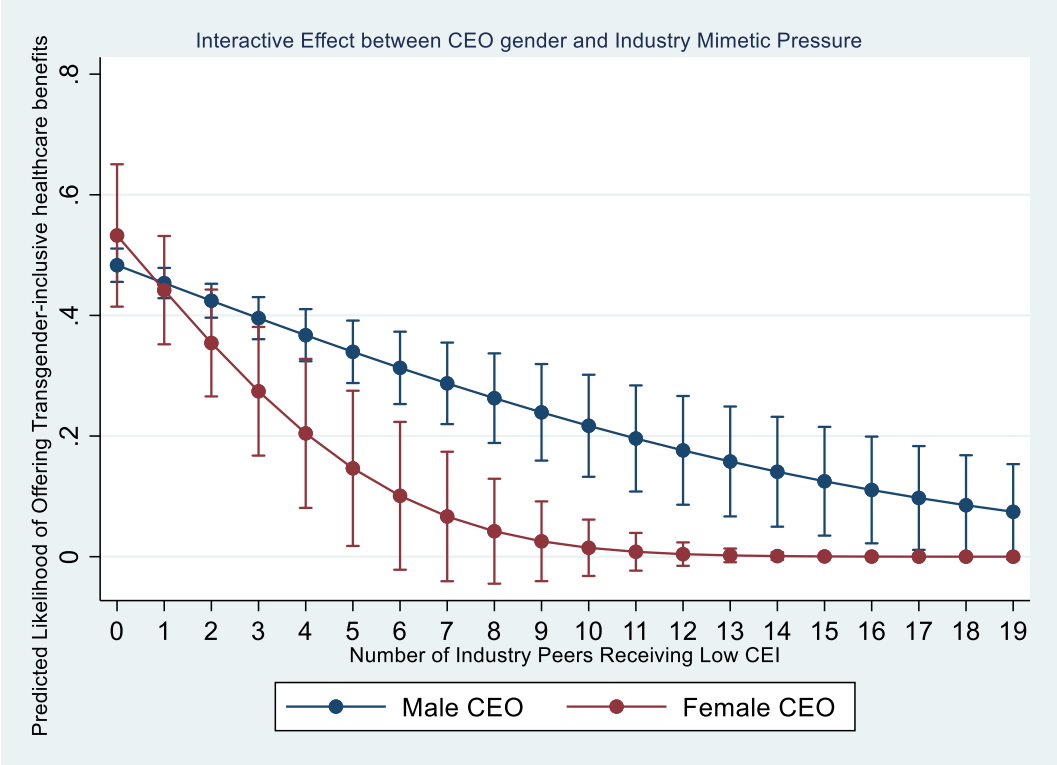
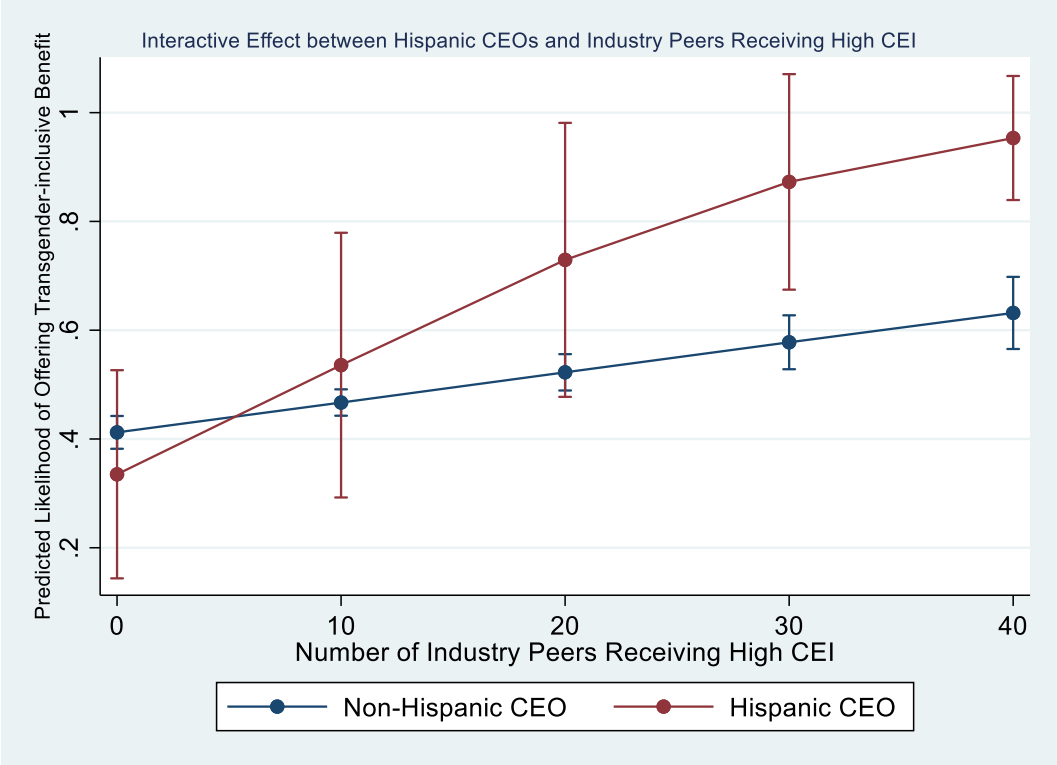


Figure 4. The Interactive Effect between Hispanic CEO and Industry Peers Receiving High CEI



APPENDIX TABLES

Appendix A. Variable Description

	Control variables	Descriptions
CEO characteristics	CEO age	The chronological age of the CEO
	CEO tenure	The number of years since the focal CEOs being appointed at the current firm
	CEO-chairman Duality	A dummy variable, which is coded as 1 if the focal CEO also undertake the role of the chairman on the board, and 0 otherwise
	CEO MBA degree	A dummy variable, which is coded as 1 if the focal CEO has received an MBA degree, and 0 otherwise
	CEO Legal degree	A dummy variable, which is coded as 1 if the focal CEO has received a law degree (LL.B, LLM, or JD), and 0 otherwise
Firm characteristics	Firm size	The book value of total assets and the total number of employees, both of which are log transformed and lagged by 1 year.
	ROA	The ratio of net income to the book value of total assets in prior year
	Tobin's Q	The ratio of the sum of book values of total assets plus market values of the firm's common equity minus the book value of common equity and deferred taxes to book value of total assets
	Leverage	The sum of long-term debt and debt in current liabilities divided by total assets
	Financial slack	The sum of cash and short-term investments divided by the book value of total assets
	Capital intensity	The ratio of capital expenditure to total assets from previous year
	R&D intensity	R&D expenditure divided by total assets in prior year
	Marketing intensity	Advertising expenditure divided by total assets in prior year
	Firm age	The number of years since founded and log transformed
	Corporate governance quality	The overall Refinitv ESG ratings on firm's corporate governance quality such as boardroom's gender diversity, size, and independence
	Social performance	The overall Refinitv ESG ratings on firm's performance in human right, community engagement, and diversity in prior year

Environment characteristics	Year	Dummy variables
	Industry	2-digit NACIS code
	Region	Pacific, Mountain, West South Central, South Atlantic, West North Central, East North Central, Middle Atlantic, New England, and East South Central

Appendix B. Random-Effects Logit Models Predicting Comprehensive Transgender-inclusive Healthcare Benefits by Hispanic, Asian America, Africa American CEOs

DV: Perfect Trans Benefit	(1)	(2)	(3)
Industry peers receiving high CEI	0.0804***	0.0800***	0.0818***
	(0.0135)	(0.0134)	(0.0134)
Hispanic CEO	-1.180		
	(1.558)		
Hispanic CEO × Industry peers receiving high CEI	0.218***		
	(0.0588)		
Asian American CEO		-1.651	
		(0.900)	
Asian American CEO × Industry peers receiving high CEI		0.133	
		(0.0862)	
African American CEO			0.283
			(2.233)
African American CEO × Industry peers receiving high CEI			0.0449
			(0.161)
Female CEO	0.541	0.590	0.574
	(0.818)	(0.828)	(0.823)
Tobin's Q	0.874*	0.896*	0.896*
	(0.401)	(0.403)	(0.402)
Firm size	1.422***	1.435***	1.417***
	(0.222)	(0.222)	(0.220)
Firm age	0.147	0.131	0.127
	(0.219)	(0.218)	(0.218)
Leverage	-0.0109	0.0000520	0.000340
	(0.159)	(0.157)	(0.157)
Financial slack	3.529*	3.573*	3.461*
	(1.465)	(1.479)	(1.468)
Innovation intensity	9.365	10.01	9.440
	(6.505)	(6.763)	(6.520)
Marketing intensity	16.40*	16.64*	16.49*
	(6.840)	(6.920)	(6.862)
Capital intensity	-2.555	-2.428	-2.548
	(3.078)	(3.031)	(3.069)
Employee	0.882***	0.887***	0.878***
	(0.229)	(0.231)	(0.231)
ROA	-2.765*	-2.812*	-2.788*
	(1.183)	(1.177)	(1.177)
CEO tenure	-0.0350	-0.0363	-0.0349
	(0.0265)	(0.0265)	(0.0265)
CEO age	0.0188	0.0193	0.0186
	(0.0257)	(0.0257)	(0.0257)

CEO-Chairman duality	0.407	0.411	0.424
	(0.294)	(0.290)	(0.289)
MBA degree	0.310	0.315	0.310
	(0.263)	(0.261)	(0.260)
Law degree	0.0971	0.107	0.0775
	(0.455)	(0.455)	(0.458)
Corporate governance quality	-1.141	-1.129	-1.139
	(0.837)	(0.835)	(0.835)
Social performance	2.639***	2.625***	2.643***
	(0.761)	(0.762)	(0.760)
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Region FE	Y	Y	Y
Constant	-19.43***	-19.57***	-19.24***
	(3.042)	(3.059)	(3.025)
N	4096	4096	4096
Log pseudolikelihood	-1238.9308	-1240.3682	-1240.3682

Note: Robust standard errors clustered at firm level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix C. Including Lagged Dependent Variable

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Lagged Best Place to Work for LGBTQ	4.378***	4.348***	4.363***	4.368***	4.244***	4.307***
	(0.353)	(0.348)	(0.354)	(0.353)	(0.336)	(0.313)
Tobin's Q	0.855**	0.774*	0.854**	0.762*	0.651*	0.621*
	(0.325)	(0.326)	(0.325)	(0.324)	(0.298)	(0.286)
Firm size	0.817***	0.806***	0.830***	0.783***	0.681***	0.572***
	(0.146)	(0.149)	(0.146)	(0.142)	(0.131)	(0.119)
Firm age	0.0244	0.0170	0.0223	0.0214	0.00395	-0.0229
	(0.157)	(0.157)	(0.157)	(0.155)	(0.139)	(0.132)
Leverage	-0.150	-0.165	-0.154	-0.151	-0.0653	-0.123
	(0.140)	(0.141)	(0.139)	(0.140)	(0.133)	(0.120)
Financial slack	2.094†	2.097†	2.140†	2.001†	1.797†	1.392
	(1.115)	(1.115)	(1.120)	(1.100)	(1.051)	(1.017)
Innovation intensity	8.246†	7.705†	7.947†	8.290*	5.239	4.865
	(4.227)	(4.325)	(4.417)	(4.125)	(3.689)	(3.589)
Marketing intensity	13.83*	13.79*	14.04*	12.44*	13.05*	10.60*
	(5.558)	(5.587)	(5.704)	(5.531)	(5.357)	(4.425)
Capital intensity	-1.372	-1.055	-1.165	-1.123	-1.387	-1.141
	(2.766)	(2.684)	(2.802)	(2.719)	(2.471)	(2.391)
Employee	0.531**	0.533***	0.525**	0.489**	0.466**	0.360**
	(0.164)	(0.161)	(0.163)	(0.157)	(0.148)	(0.138)
ROA	-2.765*	-2.770*	-2.772*	-2.731**	-2.619**	-2.471*
	(1.082)	(1.086)	(1.089)	(1.058)	(1.012)	(1.036)
CEO tenure	-0.0386†	-0.0380†	-0.0382†	-0.0367†	-0.0320	-0.0296
	(0.0217)	(0.0214)	(0.0216)	(0.0210)	(0.0197)	(0.0188)
CEO age	0.0178	0.0150	0.0165	0.0165	0.0105	0.0130
	(0.0217)	(0.0215)	(0.0217)	(0.0212)	(0.0200)	(0.0187)
CEO-Chairman duality	0.410†	0.393†	0.396†	0.364†	0.371†	0.254
	(0.221)	(0.221)	(0.221)	(0.218)	(0.206)	(0.190)
MBA degree	0.221	0.210	0.259	0.243	0.221	0.116

	(0.208)	(0.209)	(0.210)	(0.206)	(0.195)	(0.183)
Law degree	0.288	0.285	0.329	0.243	0.291	0.272
	(0.378)	(0.364)	(0.373)	(0.374)	(0.340)	(0.321)
Corporate governance quality	-1.109	-1.120	-1.104	-1.111	-0.954	-0.897
	(0.733)	(0.730)	(0.736)	(0.729)	(0.691)	(0.670)
Social performance	2.384***	2.354***	2.360***	2.344***	2.184***	1.921***
	(0.597)	(0.595)	(0.597)	(0.586)	(0.553)	(0.526)
Female CEO	0.706	0.479	0.0840	0.310	1.022†	0.690
	(0.559)	(0.556)	(0.683)	(0.580)	(0.545)	(0.546)
Normative pressure		-2.545†				
		(1.333)				
Female CEO × Normative pressure		-11.55*				
		(4.875)				
Coercive pressure			-0.278			
			(0.305)			
Female CEO × Coercive pressure			2.054*			
			(0.988)			
Geolocation peers receiving high CEI				0.0402**		
				(0.0151)		
Female CEO × Geolocation peers receiving high CEI				0.184**		
				(0.0614)		
Industry peers receiving high CEI					0.0658***	
					(0.0104)	
Female CEO × Industry peers receiving high CEI					-0.0437	
					(0.0439)	
Industry peers receiving low CEI						-0.391***
						(0.0619)
Female CEO × Industry peers receiving high CEI						-0.785†
						(0.404)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-13.31***	-12.70***	-13.46***	-12.80***	-11.20***	-9.314***
	(2.205)	(2.195)	(2.208)	(2.164)	(1.985)	(1.800)
N	4105	4105	4105	4105	4105	4105
Log pseudolikelihood	-1130.4137	-1124.2851	-1127.9228	-1121.3927	-1110.823	-1081.9063

Note: Robust standard errors clustered at firm level in parentheses

$^{\dagger}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Appendix D. Linear Probability Model with Firm Fixed Effect

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Tobin's Q	0.0855*	0.0798*	0.0806*	0.0802*	0.0709	0.0854*
	(0.0403)	(0.0400)	(0.0401)	(0.0401)	(0.0383)	(0.0400)
Firm size	0.101**	0.102**	0.0986**	0.0997**	0.0977**	0.100**
	(0.0344)	(0.0341)	(0.0341)	(0.0338)	(0.0322)	(0.0341)

Firm age	-0.0976	-0.106	-0.104	-0.0692	-0.0572	-0.0924
	(0.111)	(0.112)	(0.111)	(0.111)	(0.105)	(0.111)
Leverage	0.00307	0.00364	0.00322	0.00696	0.00723	0.00377
	(0.0171)	(0.0171)	(0.0171)	(0.0169)	(0.0167)	(0.0170)
Financial slack	0.186	0.192	0.177	0.199	0.159	0.191
	(0.126)	(0.126)	(0.126)	(0.126)	(0.121)	(0.125)
Innovation intensity	0.411	0.296	0.305	0.318	0.399	0.432
	(0.874)	(0.822)	(0.829)	(0.850)	(0.832)	(0.866)
Marketing intensity	-0.503	-0.506	-0.514	-0.454	-0.301	-0.502
	(0.702)	(0.686)	(0.690)	(0.706)	(0.718)	(0.703)
Capital intensity	0.304	0.320	0.322	0.278	0.258	0.303
	(0.309)	(0.304)	(0.307)	(0.305)	(0.297)	(0.312)
Employee	0.0240	0.0224	0.0216	0.0225	0.0216	0.0264
	(0.0345)	(0.0339)	(0.0342)	(0.0343)	(0.0328)	(0.0341)
ROA	0.0115	0.0179	0.0183	0.00677	0.00518	0.00871
	(0.107)	(0.107)	(0.107)	(0.107)	(0.104)	(0.107)
CEO tenure	-0.000536	-0.000741	-0.000561	-0.000794	-0.000571	-0.000528
	(0.00292)	(0.00286)	(0.00288)	(0.00287)	(0.00268)	(0.00289)
CEO age	0.000714	0.000525	0.000570	0.000689	0.00109	0.000682
	(0.00246)	(0.00243)	(0.00245)	(0.00241)	(0.00232)	(0.00244)
CEO-Chairman duality	0.0499	0.0511	0.0494	0.0502	0.0365	0.0483
	(0.0290)	(0.0288)	(0.0288)	(0.0288)	(0.0273)	(0.0287)
MBA degree	0.00279	0.00428	0.00649	0.00514	0.00487	0.000974
	(0.0265)	(0.0264)	(0.0264)	(0.0262)	(0.0249)	(0.0262)
Law degree	0.0286	0.0328	0.0326	0.0264	0.0222	0.0312
	(0.0400)	(0.0388)	(0.0393)	(0.0398)	(0.0382)	(0.0401)
Corporate governance quality	-0.132	-0.132	-0.133	-0.132	-0.120	-0.128
	(0.0702)	(0.0704)	(0.0705)	(0.0701)	(0.0679)	(0.0693)
Social performance	-0.00839	-0.0120	-0.0113	-0.00593	0.00660	-0.0150
	(0.0664)	(0.0661)	(0.0661)	(0.0657)	(0.0646)	(0.0655)
Chief Diversity Officer	-0.0710*	-0.0711*	-0.0711*	-0.0722*	-0.0670*	-0.0702*
	(0.0317)	(0.0321)	(0.0319)	(0.0315)	(0.0307)	(0.0316)
Women on the board	-0.0345	-0.0274	-0.0287	-0.0358	-0.0112	-0.0383
	(0.108)	(0.109)	(0.109)	(0.107)	(0.103)	(0.108)
Board size	-0.00609	-0.00563	-0.00574	-0.00611	-0.00540	-0.00588
	(0.00553)	(0.00552)	(0.00552)	(0.00547)	(0.00530)	(0.00551)
Female CEO	0.0663	0.0239	-0.00610	0.0395	0.154	0.0762
	(0.0609)	(0.0614)	(0.0814)	(0.0638)	(0.0850)	(0.0636)
Normative pressure		-0.121				
		(0.313)				
Female CEO × Normative pressure		-1.006*				
		(0.397)				
Coercive pressure			0.00275			
			(0.0400)			
Female CEO × Coercive pressure			0.184†			
			(0.102)			
Geolocation peers receiving high CEI				0.00640**		
				(0.00197)		

Female CEO × Geolocation peers receiving high CEI				0.0130*		
				(0.00641)		
Industry peers receiving high CEI					0.00909***	
					(0.00119)	
Female CEO × Industry peers receiving high CEI					-0.00894	
					(0.00559)	
Industry peers receiving low CEI						-0.00643*
						(0.00268)
Female CEO × Industry peers receiving low CEI						-0.0241†
						(0.0123)
Year FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Constant	-0.151	-0.112	-0.0914	-0.274	-0.443	-0.173
	(0.527)	(0.527)	(0.525)	(0.523)	(0.505)	(0.524)
N	4150	4150	4150	4150	4150	4150
R^2	0.258	0.260	0.259	0.263	0.275	0.260

Note: Robust standard errors clustered at firm level in parentheses

$^{\dagger}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Appendix E. Coarsened Exact Matching (CEM) Results

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)
Female CEO	0.0297	0.00876	0.0908	0.118	0.0926
	(0.0644)	(0.0789)	(0.0657)	(0.0826)	(0.0645)
Tobin's Q	0.0267	0.0442	0.0418	0.00369	0.0386
	(0.0405)	(0.0413)	(0.0401)	(0.0370)	(0.0383)
Firm size	0.0933***	0.0966***	0.0903***	0.0680***	0.0860***
	(0.0151)	(0.0153)	(0.0146)	(0.0143)	(0.0142)
Firm age	0.0124	0.00940	0.0100	0.00481	0.00729
	(0.0177)	(0.0180)	(0.0180)	(0.0146)	(0.0167)
Leverage	-0.0140	-0.0139	-0.0203	0.0133	-0.00976
	(0.0168)	(0.0162)	(0.0161)	(0.0140)	(0.0157)
Financial slack	0.258†	0.281†	0.229†	0.178	0.212
	(0.140)	(0.145)	(0.136)	(0.119)	(0.135)
Innovation intensity	0.946†	0.926†	0.908†	0.0269	0.807†
	(0.511)	(0.515)	(0.471)	(0.327)	(0.454)
Marketing intensity	2.136**	2.188**	1.742*	1.962*	1.900**
	(0.727)	(0.729)	(0.758)	(0.820)	(0.667)
Capital intensity	-0.119	-0.197	-0.160	-0.114	-0.156
	(0.319)	(0.336)	(0.318)	(0.274)	(0.294)
Employee	0.0486**	0.0499**	0.0461**	0.0479**	0.0424**
	(0.0167)	(0.0169)	(0.0162)	(0.0160)	(0.0157)
ROA	-0.246	-0.268†	-0.242	-0.250†	-0.244†
	(0.154)	(0.161)	(0.152)	(0.127)	(0.144)
CEO tenure	-0.00352	-0.00372	-0.00293	-0.00291	-0.00328
	(0.00271)	(0.00270)	(0.00261)	(0.00229)	(0.00249)
CEO age	-0.00214	-0.00193	-0.00212	-0.00224	-0.00101
	(0.00250)	(0.00252)	(0.00244)	(0.00217)	(0.00236)
CEO-Chairman duality	0.0714**	0.0684*	0.0665*	0.0533*	0.0516*

	(0.0275)	(0.0276)	(0.0270)	(0.0240)	(0.0262)
MBA degree	0.0222	0.0301	0.0289	0.0225	0.0201
	(0.0249)	(0.0244)	(0.0244)	(0.0216)	(0.0235)
Law degree	0.0184	0.0267	0.00700	0.0223	0.0234
	(0.0398)	(0.0411)	(0.0387)	(0.0389)	(0.0405)
Corporate governance quality	-0.130	-0.116	-0.116	-0.0985	-0.123
	(0.0805)	(0.0810)	(0.0785)	(0.0684)	(0.0745)
Social performance	0.323***	0.330***	0.304***	0.256***	0.236***
	(0.0674)	(0.0687)	(0.0661)	(0.0571)	(0.0638)
Normative pressure	-0.566***				
	(0.152)				
Female CEO × Normative pressure	-0.995*				
	(0.477)				
Coercive pressure		-0.00746			
		(0.0368)			
Female CEO × Coercive pressure		0.233*			
		(0.114)			
Geolocation peers receiving high CEI			0.00975***		
			(0.00160)		
Female CEO × Geolocation peers receiving high CEI			0.00555†		
			(0.00301)		
Industry peers receiving high CEI				0.0204***	
				(0.00153)	
Female CEO × Industry peers receiving high CEI				-0.00660	
				(0.00563)	
Industry peers receiving low CEI					-0.0314***
					(0.00321)
Female CEO × Industry peers receiving low CEI					-0.0395**
					(0.0135)
Year FE	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y
Constant	-0.396†	-0.534*	-0.473*	-0.166	-0.350
	(0.221)	(0.221)	(0.217)	(0.205)	(0.210)
N	4168	4168	4168	4168	4168
R2	0.380	0.372	0.390	0.451	0.404

Note: Robust standard errors clustered at firm level in parentheses
†p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Appendix F. Models Using 2-digit SIC Code

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Tobin's Q	1.194**	1.108*	1.182**	1.075*	0.966*	1.066*
	(0.451)	(0.457)	(0.456)	(0.452)	(0.409)	(0.420)
Firm size	2.029***	2.063***	2.061***	1.957***	1.753***	1.717***
	(0.261)	(0.261)	(0.261)	(0.256)	(0.235)	(0.236)
Firm age	0.0757	0.0578	0.0943	0.0953	0.0755	0.0530
	(0.243)	(0.246)	(0.248)	(0.245)	(0.215)	(0.220)
Leverage	-0.00276	-0.00432	-0.00582	0.0175	0.0402	-0.0144
	(0.163)	(0.166)	(0.163)	(0.169)	(0.155)	(0.156)
Financial slack	3.244*	3.343*	3.314*	3.023	2.962*	2.702

	(1.549)	(1.565)	(1.557)	(1.558)	(1.462)	(1.489)
Innovation intensity	10.42	8.997	9.408	10.70	9.036	7.981
	(7.755)	(8.105)	(8.029)	(7.630)	(6.920)	(7.011)
Marketing intensity	18.58*	19.05**	18.94*	17.32*	17.11**	16.17*
	(7.218)	(7.294)	(7.403)	(7.025)	(6.395)	(6.645)
Capital intensity	0.540	0.901	1.024	0.240	-0.190	-0.615
	(3.431)	(3.328)	(3.312)	(3.461)	(3.298)	(3.485)
Employee	0.622*	0.584*	0.593*	0.542*	0.561*	0.560*
	(0.268)	(0.269)	(0.269)	(0.266)	(0.239)	(0.242)
ROA	-2.464*	-2.474*	-2.460*	-2.437*	-2.484*	-2.283
	(1.218)	(1.220)	(1.222)	(1.220)	(1.205)	(1.197)
CEO tenure	-0.0497	-0.0485	-0.0500	-0.0484	-0.0425	-0.0432
	(0.0292)	(0.0286)	(0.0290)	(0.0286)	(0.0265)	(0.0268)
CEO age	0.0268	0.0236	0.0254	0.0262	0.0203	0.0184
	(0.0276)	(0.0276)	(0.0276)	(0.0273)	(0.0257)	(0.0257)
CEO-Chairman duality	0.536	0.515	0.508	0.509	0.520	0.438
	(0.310)	(0.309)	(0.310)	(0.305)	(0.287)	(0.287)
MBA degree	0.327	0.363	0.399	0.347	0.336	0.230
	(0.268)	(0.269)	(0.271)	(0.268)	(0.256)	(0.254)
Law degree	0.143	0.229	0.204	0.0625	0.116	0.169
	(0.508)	(0.481)	(0.499)	(0.503)	(0.434)	(0.447)
Corporate governance quality	-1.185	-1.220	-1.186	-1.156	-1.014	-1.079
	(0.871)	(0.865)	(0.875)	(0.870)	(0.829)	(0.824)
Social performance	3.008***	2.911***	2.933***	3.002***	2.858***	2.735***
	(0.813)	(0.815)	(0.817)	(0.798)	(0.754)	(0.754)
Female CEO	0.577	0.452	-0.411	0.00335	1.424*	0.761
	(0.871)	(0.874)	(1.023)	(0.901)	(0.678)	(0.878)
Normative pressure		-2.200				
		(2.283)				
Female CEO × Normative pressure		-19.84**				
		(6.690)				
Coercive pressure			-0.240			
			(0.450)			
Female CEO × Coercive pressure			3.492**			
			(1.302)			
Geolocation peers receiving high CEI				0.0635**		
				(0.0211)		
Female CEO × Geolocation peers receiving high CEI				0.291*		
				(0.125)		
Industry peers receiving high CEI					0.0890***	
					(0.0153)	
Female CEO × Industry peers receiving high CEI					-0.0806	
					(0.0730)	
Industry peers receiving low CEI						-0.392***
						(0.0781)
Female CEO × Industry peers receiving low CEI						-0.915*
						(0.460)

Year FE	Y	Y	Y	Y	Y	Y
Industry FE (2-digit SIC)	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-27.01***	-26.71***	-27.25***	-26.17***	-24.00***	-22.56***
	(4.107)	(4.096)	(4.139)	(4.035)	(3.696)	(3.621)
N	4100	4100	4100	4100	4100	4100
Log pseudolikelihood	-1233.0707	-1226.276	-1228.8507	-1220.4226	-1209.7172	-1202.651

Note: Robust standard errors clustered at firm level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix G. Models Using 3-digit SIC Code

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Tobin's Q	1.376**	1.297**	1.339**	1.276**	1.168**	1.241**
	(0.476)	(0.478)	(0.482)	(0.476)	(0.439)	(0.452)
Firm size	2.241***	2.255***	2.273***	2.157***	1.937***	1.914***
	(0.303)	(0.303)	(0.304)	(0.299)	(0.273)	(0.280)
Firm age	0.0980	0.0741	0.115	0.111	0.0911	0.0784
	(0.243)	(0.241)	(0.240)	(0.238)	(0.214)	(0.216)
Leverage	0.0695	0.0720	0.0610	0.0921	0.112	0.0423
	(0.171)	(0.173)	(0.171)	(0.178)	(0.162)	(0.163)
Financial slack	3.319*	3.330*	3.386*	2.873†	2.958*	2.627†
	(1.504)	(1.522)	(1.517)	(1.525)	(1.419)	(1.447)
Innovation intensity	19.12**	16.92*	17.71*	17.83**	16.63**	14.92*
	(6.895)	(7.413)	(7.451)	(6.867)	(6.198)	(6.545)
Marketing intensity	8.036	9.521	8.061	10.92	7.566	6.742
	(7.168)	(6.866)	(7.459)	(6.949)	(6.399)	(6.290)
Capital intensity	3.868	4.264	4.385	3.477	3.120	2.666
	(3.081)	(3.008)	(2.983)	(3.077)	(2.970)	(3.074)
Employee	0.552†	0.532†	0.526†	0.500	0.528†	0.513†
	(0.307)	(0.312)	(0.309)	(0.304)	(0.275)	(0.280)
ROA	-2.616*	-2.597*	-2.588*	-2.617*	-2.637*	-2.479*
	(1.248)	(1.253)	(1.251)	(1.265)	(1.211)	(1.235)
CEO tenure	-0.0590*	-0.0565*	-0.0584*	-0.0577*	-0.0499†	-0.0513†
	(0.0284)	(0.0278)	(0.0283)	(0.0276)	(0.0262)	(0.0262)
CEO age	0.0257	0.0219	0.0233	0.0254	0.0197	0.0178
	(0.0269)	(0.0270)	(0.0271)	(0.0267)	(0.0252)	(0.0253)
CEO-Chairman duality	0.562†	0.523	0.537†	0.538†	0.517†	0.463
	(0.317)	(0.315)	(0.318)	(0.313)	(0.292)	(0.297)
MBA degree	0.309	0.341	0.381	0.337	0.312	0.196
	(0.277)	(0.277)	(0.280)	(0.277)	(0.265)	(0.265)
Law degree	0.203	0.262	0.237	0.117	0.203	0.260
	(0.483)	(0.460)	(0.476)	(0.482)	(0.415)	(0.427)
Corporate governance quality	-1.159	-1.166	-1.142	-1.102	-0.993	-1.027
	(0.882)	(0.876)	(0.887)	(0.883)	(0.845)	(0.840)
Social performance	2.701**	2.599**	2.617**	2.653**	2.508**	2.415**
	(0.839)	(0.839)	(0.844)	(0.822)	(0.782)	(0.786)
Female CEO	0.276	0.138	-0.714	-0.392	1.007	0.522
	(0.836)	(0.834)	(0.977)	(0.864)	(0.697)	(0.865)
Normative pressure		-2.636				
		(2.211)				
Female CEO × Normative pressure		-18.39**				
		(6.464)				

Coercive pressure			0.0326			
			(0.463)			
Female CEO × Coercive pressure			3.535**			
			(1.329)			
Geolocation peers receiving high CEI				0.0602**		
				(0.0211)		
Female CEO × Geolocation peers receiving high CEI				0.329*		
				(0.138)		
Industry peers receiving high CEI					0.0852***	
					(0.0149)	
Female CEO × Industry peers receiving high CEI					-0.0665	
					(0.0700)	
Industry peers receiving low CEI						-0.366***
						(0.0728)
Female CEO × Industry peers receiving low CEI						-1.010†
						(0.531)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE (3-digit SIC)	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-29.75***	-29.07***	-29.92***	-28.67***	-26.49***	-25.20***
	(4.358)	(4.360)	(4.379)	(4.304)	(4.034)	(3.953)
N	3838	3838	3838	3838	3838	3838
Log pseudolikelihood	-1141.5386	-1134.4498	-1136.8197	-1128.2678	-1119.3592	-1113.12

Note: Robust standard errors clustered at firm level in parentheses

†$p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix H. Alternative Dependent Variable

DV: Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Tobin's Q	1.116*	0.973	1.102*	0.977	0.926	0.955*
	(0.539)	(0.543)	(0.541)	(0.532)	(0.489)	(0.482)
Firm size	1.931***	1.907***	1.948***	1.839***	1.678***	1.619***
	(0.291)	(0.296)	(0.293)	(0.281)	(0.260)	(0.252)
Firm age	0.159	0.147	0.182	0.156	0.119	0.0868
	(0.283)	(0.289)	(0.289)	(0.278)	(0.251)	(0.253)
Leverage	-0.0541	-0.0683	-0.0632	-0.0322	0.000190	-0.0789
	(0.190)	(0.193)	(0.188)	(0.192)	(0.180)	(0.175)
Financial slack	4.089*	4.060*	4.161*	3.902*	3.600*	3.431*
	(1.757)	(1.763)	(1.761)	(1.757)	(1.638)	(1.648)
Innovation intensity	20.80*	19.04*	19.69*	20.14*	16.57*	16.14*
	(8.738)	(8.973)	(9.036)	(8.428)	(7.900)	(7.780)
Marketing intensity	20.41*	20.18*	20.78*	19.06*	19.09*	17.41*
	(8.767)	(8.841)	(8.877)	(8.478)	(7.843)	(7.696)
Capital intensity	-3.280	-2.802	-2.825	-3.435	-3.569	-4.415
	(3.743)	(3.624)	(3.657)	(3.711)	(3.440)	(3.698)
Employee	1.183***	1.170***	1.169***	1.101***	1.092***	1.006***
	(0.293)	(0.293)	(0.292)	(0.286)	(0.264)	(0.255)

ROA	-1.900	-1.987	-1.887	-1.906	-2.011	-1.944
	(1.251)	(1.258)	(1.253)	(1.236)	(1.195)	(1.250)
CEO tenure	-0.0622	-0.0565	-0.0603	-0.0587	-0.0511	-0.0525
	(0.0343)	(0.0338)	(0.0341)	(0.0339)	(0.0312)	(0.0313)
CEO age	0.0216	0.0149	0.0197	0.0213	0.0145	0.0115
	(0.0317)	(0.0314)	(0.0314)	(0.0314)	(0.0295)	(0.0291)
CEO-Chairman duality	0.332	0.312	0.310	0.308	0.320	0.242
	(0.338)	(0.340)	(0.339)	(0.332)	(0.318)	(0.309)
MBA degree	0.318	0.320	0.356	0.332	0.326	0.230
	(0.326)	(0.324)	(0.325)	(0.323)	(0.307)	(0.304)
Law degree	0.282	0.366	0.319	0.191	0.246	0.265
	(0.559)	(0.514)	(0.544)	(0.553)	(0.482)	(0.493)
Corporate governance quality	-1.317	-1.329	-1.305	-1.288	-1.162	-1.107
	(0.970)	(0.960)	(0.967)	(0.967)	(0.926)	(0.914)
Social performance	2.911**	2.869**	2.838**	2.904***	2.767***	2.678**
	(0.889)	(0.885)	(0.889)	(0.868)	(0.829)	(0.828)
Female CEO	0.510	0.521	-0.336	0.179	0.983	0.837
	(0.831)	(0.771)	(0.890)	(0.854)	(0.817)	(0.861)
Normative pressure		-5.807*				
		(2.731)				
Female CEO × Normative pressure		-22.40**				
		(8.242)				
Coercive pressure			0.229			
			(0.573)			
Female CEO × Coercive pressure			3.616**			
			(1.339)			
Geolocation peers receiving high CEI				0.0607*		
				(0.0246)		
Female CEO × Geolocation peers receiving high CEI				0.220**		
				(0.0781)		
Industry peers receiving high CEI					0.0773***	
					(0.0158)	
Female CEO × Industry peers receiving high CEI					-0.0408	
					(0.0691)	
Industry peers receiving low CEI						-0.387***
						(0.0850)
Female CEO × Industry peers receiving low CEI						-1.066**
						(0.405)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-25.84***	-24.42***	-25.93***	-24.65***	-22.47***	-20.79***
	(3.964)	(3.928)	(3.975)	(3.853)	(3.559)	(3.439)
N	4105	4105	4105	4105	4105	4105

Log pseudolikelihood	-1186.0301	-1177.9281	-1183.1203	-1178.0249	-1170.8635	-1159.965

Note: Robust standard errors clustered at firm level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix I. Ruling Out Alternative Mechanism by Including "*Female CEO × Female director*"

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Female CEO	2.122	1.771	0.581	1.965	2.573	2.448
	(1.472)	(1.511)	(1.584)	(1.382)	(1.461)	(1.529)
Female director	0.215	0.217	0.214	0.193	0.227	0.169
	(0.134)	(0.135)	(0.134)	(0.132)	(0.126)	(0.125)
Female CEO × Female director	-0.667	-0.576	-0.472	-0.769	-0.526	-0.710
	(0.608)	(0.711)	(0.655)	(0.631)	(0.475)	(0.586)
Tobin's Q	1.116*	1.014*	1.109*	1.004*	0.891*	0.942*
	(0.463)	(0.466)	(0.466)	(0.465)	(0.423)	(0.431)
Firm size	1.662***	1.636***	1.678***	1.576***	1.428***	1.384***
	(0.244)	(0.247)	(0.245)	(0.240)	(0.220)	(0.216)
Firm age	0.0991	0.0976	0.120	0.140	0.0672	0.0495
	(0.243)	(0.245)	(0.246)	(0.247)	(0.216)	(0.221)
Leverage	-0.0837	-0.0952	-0.0940	-0.0606	-0.0178	-0.0918
	(0.167)	(0.170)	(0.166)	(0.172)	(0.160)	(0.157)
Financial slack	3.547*	3.640*	3.632*	3.450*	3.173*	2.875
	(1.526)	(1.537)	(1.533)	(1.539)	(1.448)	(1.467)
Innovation intensity	12.18	10.76	11.39	11.51	8.904	8.959
	(7.340)	(7.565)	(7.616)	(7.276)	(6.542)	(6.614)
Marketing intensity	15.53*	15.47*	16.02*	14.14	14.64*	13.11*
	(7.492)	(7.591)	(7.616)	(7.368)	(6.808)	(6.588)
Capital intensity	-2.428	-2.066	-1.951	-2.702	-2.808	-3.248
	(3.336)	(3.227)	(3.244)	(3.336)	(3.118)	(3.264)
Employee	0.920***	0.922***	0.915***	0.879***	0.851***	0.769***
	(0.254)	(0.254)	(0.252)	(0.250)	(0.230)	(0.226)
ROA	-2.315	-2.372	-2.240	-2.410	-2.157	-2.073
	(1.492)	(1.503)	(1.496)	(1.495)	(1.430)	(1.510)
CEO tenure	-0.0375	-0.0353	-0.0385	-0.0346	-0.0293	-0.0306
	(0.0297)	(0.0291)	(0.0294)	(0.0289)	(0.0269)	(0.0272)
CEO age	0.0222	0.0174	0.0206	0.0202	0.0139	0.0138
	(0.0278)	(0.0279)	(0.0279)	(0.0274)	(0.0260)	(0.0258)
CEO-Chairman duality	0.415	0.404	0.395	0.389	0.393	0.321
	(0.312)	(0.311)	(0.313)	(0.307)	(0.288)	(0.287)
MBA degree	0.310	0.316	0.363	0.338	0.320	0.217
	(0.275)	(0.275)	(0.278)	(0.275)	(0.263)	(0.260)
Law degree	0.163	0.197	0.187	0.0919	0.159	0.176
	(0.492)	(0.471)	(0.489)	(0.490)	(0.429)	(0.431)
Corporate governance quality	-1.349	-1.366	-1.342	-1.323	-1.222	-1.216
	(0.904)	(0.891)	(0.904)	(0.902)	(0.859)	(0.847)
Social performance	2.757***	2.695**	2.679**	2.758***	2.591***	2.510**
	(0.827)	(0.826)	(0.831)	(0.814)	(0.766)	(0.767)
Normative pressure		-4.230				
		(2.208)				

Female CEO × Normative pressure		-17.53**				
		(6.576)				
Coercive pressure			0.0766			
			(0.442)			
Female CEO × Coercive pressure			3.596**			
			(1.264)			
Geolocation peers receiving high CEI				0.0602**		
				(0.0215)		
Female CEO × Geolocation peers receiving high CEI				0.298		
				(0.194)		
Industry peers receiving high CEI					0.0837***	
					(0.0138)	
Female CEO × Industry peers receiving high CEI					-0.0848	
					(0.0594)	
Industry peers receiving low CEI						-0.416***
						(0.0796)
Female CEO × Industry peers receiving low CEI						-0.839†
						(0.441)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-22.31***	-21.24***	-22.48***	-21.42***	-19.29***	-17.81***
	(3.347)	(3.325)	(3.366)	(3.294)	(3.008)	(2.926)
N	4087	4087	4087	4087	4087	4087
Log pseudolikelihood	-1257.5758	-1250.8306	-1253.3126	-1248.3527	-1235.375	-1223.5867

Note: Robust standard errors clustered at firm level in parentheses

$^{\dagger}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Appendix J. Ruling Out Alternative Mechanism by Including "*Female CEO × Female top manager*"

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Female CEO	-0.0206	-0.152	-1.256	-0.472	0.959	0.218
	(0.961)	(1.018)	(1.088)	(0.959)	(0.789)	(0.939)
Diversity ratio	0.334	0.363	0.340	0.341	0.305	0.271
	(0.214)	(0.216)	(0.213)	(0.221)	(0.236)	(0.222)
Female CEO × Female top manager	0.586	0.605	0.844	0.467	0.586	0.520
	(0.557)	(0.611)	(0.531)	(0.597)	(0.527)	(0.538)
Tobin's Q	1.139*	1.022*	1.132*	1.017*	0.933*	0.977*
	(0.443)	(0.448)	(0.448)	(0.444)	(0.405)	(0.406)
Firm size	1.624***	1.613***	1.644***	1.561***	1.406***	1.337***

	(0.244)	(0.247)	(0.245)	(0.240)	(0.221)	(0.215)
Firm age	-0.0343	-0.0409	-0.0138	0.000150	-0.0532	-0.0695
	(0.246)	(0.248)	(0.250)	(0.247)	(0.220)	(0.223)
Leverage	-0.0965	-0.115	-0.106	-0.0827	-0.0323	-0.113
	(0.165)	(0.168)	(0.164)	(0.167)	(0.158)	(0.155)
Financial slack	3.763*	3.858*	3.850*	3.601*	3.346*	3.084*
	(1.551)	(1.568)	(1.564)	(1.561)	(1.469)	(1.478)
Innovation intensity	13.15	11.48	11.90	12.82	9.865	9.926
	(7.548)	(7.756)	(7.880)	(7.388)	(6.796)	(6.726)
Marketing intensity	16.50*	16.63*	16.85*	15.12*	15.79*	13.92*
	(7.278)	(7.351)	(7.417)	(7.102)	(6.608)	(6.415)
Capital intensity	-2.725	-2.298	-2.254	-2.830	-3.129	-3.378
	(3.519)	(3.399)	(3.500)	(3.508)	(3.229)	(3.414)
Employee	1.017***	1.013***	1.015***	0.940***	0.944***	0.860***
	(0.254)	(0.253)	(0.254)	(0.249)	(0.233)	(0.225)
ROA	-3.051*	-3.112*	-3.032*	-3.078*	-3.098**	-2.955*
	(1.243)	(1.254)	(1.251)	(1.248)	(1.199)	(1.222)
CEO tenure	-0.0421	-0.0396	-0.0427	-0.0402	-0.0338	-0.0355
	(0.0298)	(0.0293)	(0.0297)	(0.0290)	(0.0272)	(0.0273)
CEO age	0.0191	0.0148	0.0180	0.0182	0.0110	0.0111
	(0.0278)	(0.0278)	(0.0279)	(0.0274)	(0.0262)	(0.0258)
CEO-Chairman duality	0.443	0.428	0.423	0.417	0.421	0.340
	(0.311)	(0.310)	(0.311)	(0.306)	(0.289)	(0.286)
MBA degree	0.324	0.347	0.394	0.346	0.345	0.231
	(0.273)	(0.275)	(0.276)	(0.274)	(0.262)	(0.257)
Law degree	0.177	0.234	0.222	0.0989	0.193	0.190
	(0.508)	(0.475)	(0.502)	(0.504)	(0.432)	(0.444)
Corporate governance quality	-1.023	-1.067	-1.033	-0.989	-0.902	-0.889
	(0.892)	(0.882)	(0.896)	(0.888)	(0.854)	(0.837)
Social performance	3.175***	3.093***	3.087***	3.150***	2.981***	2.859***
	(0.821)	(0.819)	(0.826)	(0.804)	(0.768)	(0.763)
Normative pressure		-4.287				
		(2.203)				
Female CEO × Normative pressure		-19.57**				
		(7.044)				
Coercive pressure			0.0132			
			(0.444)			
Female CEO × Coercive pressure			4.052**			
			(1.370)			
Geolocation peers receiving high CEI				0.0613**		
				(0.0216)		
Female CEO × Geolocation peers receiving high CEI				0.295*		
				(0.145)		
Industry peers receiving high CEI					0.0831***	
					(0.0141)	
Female CEO × Industry peers					-0.0946	

receiving high CEI						
					(0.0747)	
Industry peers receiving low CEI						-0.437***
						(0.0844)
Female CEO × Industry peers receiving low CEI						-0.806†
						(0.469)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-21.53***	-20.55***	-21.77***	-20.84***	-18.66***	-17.06***
	(3.361)	(3.350)	(3.383)	(3.326)	(3.035)	(2.925)
N	4027	4027	4027	4027	4027	4027
Log pseudolikelihood	-1240.7132	-1232.4598	-1235.589	-1229.7428	-1218.8028	-1205.8859

Note: Robust standard errors clustered at firm level in parentheses

$^{\dagger}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Appendix K. Ruling Out Alternative Mechanism by Including "*Female CEO* × *Managerial Power*"

DV: Perfect Trans Benefit	(1)	(2)	(3)	(4)	(5)	(6)
Female CEO	0.605	0.366	-0.696	-0.314	1.475	0.710
	(0.936)	(0.945)	(0.988)	(0.930)	(0.758)	(0.871)
Managerial power	0.0587	0.168	0.0525	0.0505	-0.0672	-0.0308
	(0.618)	(0.605)	(0.618)	(0.613)	(0.560)	(0.561)
Female CEO × Managerial power	0.181	-0.386	-0.684	-0.665	0.182	-0.00400
	(1.043)	(1.065)	(0.847)	(0.907)	(0.924)	(0.927)
Tobin's Q	1.223**	1.098*	1.206**	1.095*	1.019*	1.079**
	(0.447)	(0.449)	(0.451)	(0.446)	(0.407)	(0.406)
Firm size	1.679***	1.661***	1.704***	1.605***	1.457***	1.390***
	(0.251)	(0.253)	(0.251)	(0.245)	(0.225)	(0.219)
Firm age	0.243	0.253	0.268	0.265	0.195	0.186
	(0.250)	(0.249)	(0.252)	(0.247)	(0.220)	(0.217)
Leverage	-0.0510	-0.0668	-0.0619	-0.0366	0.00907	-0.0618
	(0.166)	(0.169)	(0.166)	(0.170)	(0.160)	(0.155)
Financial slack	3.778*	3.868*	3.871*	3.614*	3.403*	3.115*
	(1.542)	(1.552)	(1.549)	(1.546)	(1.461)	(1.471)
Innovation intensity	13.19	11.41	11.94	12.93	9.893	9.947
	(7.263)	(7.578)	(7.654)	(7.109)	(6.493)	(6.453)
Marketing intensity	16.99*	16.98*	17.39*	15.56*	16.15*	14.27*
	(7.447)	(7.508)	(7.550)	(7.223)	(6.719)	(6.528)
Capital intensity	-2.491	-2.178	-2.083	-2.667	-2.860	-3.277
	(3.370)	(3.262)	(3.291)	(3.362)	(3.126)	(3.279)
Employee	0.965***	0.953***	0.950***	0.893***	0.890***	0.801***
	(0.255)	(0.253)	(0.254)	(0.250)	(0.233)	(0.225)
ROA	-2.737*	-2.775*	-2.708*	-2.750*	-2.798*	-2.605*
	(1.215)	(1.223)	(1.222)	(1.218)	(1.187)	(1.200)
CEO tenure	-0.0419	-0.0427	-0.0399	-0.0400	-0.0279	-0.0313
	(0.0381)	(0.0371)	(0.0381)	(0.0375)	(0.0343)	(0.0343)

CEO age	0.0242	0.0200	0.0218	0.0235	0.0153	0.0148
	(0.0280)	(0.0279)	(0.0280)	(0.0275)	(0.0261)	(0.0257)
CEO-Chairman duality	0.390	0.288	0.396	0.398	0.476	0.377
	(0.608)	(0.599)	(0.608)	(0.589)	(0.551)	(0.544)
MBA degree	0.323	0.335	0.368	0.341	0.335	0.224
	(0.278)	(0.279)	(0.282)	(0.277)	(0.266)	(0.261)
Law degree	0.134	0.162	0.145	0.0373	0.153	0.148
	(0.504)	(0.475)	(0.494)	(0.497)	(0.435)	(0.439)
Corporate governance quality	-1.151	-1.193	-1.159	-1.133	-1.032	-1.063
	(0.877)	(0.865)	(0.880)	(0.875)	(0.838)	(0.822)
Social performance	2.800***	2.743***	2.732***	2.790***	2.643***	2.544***
	(0.826)	(0.823)	(0.829)	(0.807)	(0.769)	(0.762)
Normative pressure		-5.251*				
		(2.300)				
Female CEO × Normative pressure		-20.15**				
		(6.767)				
Coercive pressure			0.0941			
			(0.454)			
Female CEO × Coercive pressure			3.946**			
			(1.243)			
Geolocation peers receiving high CEI				0.0621**		
				(0.0217)		
Female CEO × Geolocation peers receiving high CEI				0.332*		
				(0.153)		
Industry peers receiving high CEI					0.0833***	
					(0.0141)	
Female CEO × Industry peers receiving high CEI					-0.0869	
					(0.0747)	
Industry peers receiving low CEI						-0.431***
						(0.0827)
Female CEO × Industry peers receiving low CEI						-0.855*
						(0.414)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y
Constant	-23.11***	-21.93***	-23.25***	-22.24***	-20.12***	-18.49***
	(3.423)	(3.399)	(3.429)	(3.365)	(3.077)	(2.957)
N	4099	4099	4099	4099	4099	4099
Log pseudolikelihood	-1262.6062	-1253.4573	-1257.9598	-1250.8648	-1240.7841	-1227.5865

Note: Robust standard errors clustered at firm level in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Chapter 2: Bound by Origins: CEO Cultural Heritage and Corporate Sustainability Performance

ABSTRACT

In this study, I explore the role of CEOs' cultural heritage in relation to corporate sustainability performance. Drawing upon upper echelons theory and the cultural transmission argument, I argue that CEOs' inherited cultures—reflected in their uncertainty avoidance index—shape sustainability preferences and influence corporate social and environmental performance. Furthermore, I posit two boundary conditions whereby CEO bonuses strengthen the relationship between CEO uncertainty avoidance and corporate sustainability performance, while newly appointed CEOs weaken this relationship. Utilizing a sample of 4,839 firm-year matched observations from the Fortune 500 spanning 13 years, I find that firms led by CEOs with a higher uncertainty avoidance index are negatively correlated with corporate sustainability performance, particularly in environmental outcomes. Additionally, these firms exhibit poorer environmental and social performance when CEO bonuses represent a larger share of total compensation. Conversely, newly appointed CEOs positively moderate the relationship between uncertainty avoidance and social and environmental performance dimensions—including resource use, emissions, and community relations—leading to improved outcomes in these areas when they have been in office for less than three years. Overall, my results highlight that informal institution, such as the national cultural values ingrained in individuals, are important determinants of corporate sustainability performance.

Keywords: CEO cultural heritage, uncertainty avoidance, cultural transmission, corporate sustainability performance, national cultural values

INTRODUCTION

Corporate sustainability, defined as the incorporation of social and environmental concerns into business operations while addressing the needs of a firm's primary and secondary stakeholders (e.g., shareholders, employees, and communities) without compromising the interests of future stakeholders (Burbano, Delmas, & Martin, 2024; Dyllick & Hockerts, 2002; Neubaum & Zahra, 2006; Sharma & Henriques, 2005), has garnered significant attention in recent years, both in academic literature and in the business community. On the one hand, over the past two decades, approximately 12,000 studies on corporate sustainability have been published (Burbano et al., 2024), and 96% of the world's top 250 firms are voluntarily disclose their sustainability reports to the public (KPMG, 2022). On the other hand, the relationship between corporate sustainability performance and corporate financial performance remains inconclusive, and divergent views persist regarding whether corporations should engage in sustainability initiatives (Barnett & Salomon, 2012; McWilliams & Siegel, 2001; Orlitzky, Schmidt, & Rynes, 2003; Wang, Dou, & Jia, 2016; Zhao & Murrell, 2022). Meanwhile, the rapid growth of sustainability initiatives has also sparked criticism, with claims that sustainability is "not a neutral concept or activity but rather one that is value-laden and ideologically or politically tilted" (Venable, 2024, p. 1710). This has triggered a backlash against Environment, Social, and Governance (ESG) initiatives and contributed to the emergence of anti-ESG laws (Dial et al., 2023).

In summary, the ongoing debates regarding corporate sustainability performance and corporate financial performance, as well as the rise of ESG backlash, have made the variation in sustainability performance a complex and puzzling issue. Indeed, we are still far from fully understanding the heterogeneity in corporate social and environmental

performance (Ioannou & Serafeim, 2012). More importantly, there is a paucity of research focused on understanding the underlying mechanisms through which strategic leaders influence corporate sustainability performance (Burbano et al., 2024).

Firms' strategic decision-making regarding sustainability investments and corporate strategies related to corporate social responsibility (CSR) often rests with the CEOs (Hawn, Burbano, & Moulton-Tetlock, 2021; Waldman & Siegel, 2008; Waldman et al., 2006a; Waldman et al., 2006b). Specifically, CEOs account for approximately 30% of the total variance in social and environmental performance (Wernicke & Sajko, 2022). Prior research has identified a variety of CEOs' managerial attributes and characteristics as significant determinants of corporate sustainability performance and related outcomes. These include CEOs' demographic characteristics (e.g., age, gender, educational background), personal values and personality traits (e.g., prosocial values, narcissism), and professional experiences (e.g., in-role experience, outside connections) (see Wang et al., 2024, for a meta-analysis). Other significant factors encompass CEOs' managerial ability (Yuan et al., 2019), job demands (Popli & Raithatha, 2023), compensation and power (see Velte, 2020, for a review), founder status (Devos et al., 2024), as well as time-invariant experiences, such as early life disasters or poverty experiences (Bernile, Bhagwat, & Rau, 2017; O'Sullivan, Zolotoy, Fan, 2021; Xu & Ma, 2022), and military experience (Benmelech & Frydman, 2015; Koch-Bayram & Wernicke, 2018).

Despite the extensive studies on the relationship between CEO characteristics and corporate sustainability outcomes, CEOs' cultural heritage is often overlooked in strategy and management literature. Specifically, there is little understanding of how cultural heritage shapes leaders and how a leader's cultural heritage subsequently affects

corporate performance (Nguyen, Hagendorff, & Eshraghi, 2018). Understanding how CEOs' cultural heritage, and when a CEO's inherited national cultural values, affect corporate sustainability performance remains an important research question for two main reasons. First, national cultural values are significant informal institutions that shape economic (Guiso, Sapienza, & Zingales, 2006) and social outcomes (Caprar & Neville, 2012; Miska, Szőcs, & Schiffinger, 2018). However, extant literature is predominantly focused on cross-country analyses that examine how national cultural values, as macro-level informal institutions, affect companies located in corresponding countries and their corporate sustainability performance (e.g., Burbano et al. 2021; Cai, Pan, & Statman, 2016). There is a scarcity of literature addressing how executives' inherited cultural values influence corporate sustainability performance. Second, prior research linking national cultural dimensions and corporate sustainability performance yields rather inconclusive results (see Miska et al., 2018, p.264-265, for an overview). It is therefore essential to examine how CEOs' cultural heritage, and under which circumstances a CEO's cultural heritage influences corporate sustainability performance.

This paper focuses on the effect of a previously underexplored and time-invariant leadership characteristic—CEO's cultural background—on corporate sustainability performance. Specifically, I concentrate on one dimension of national cultural values—uncertainty avoidance index (UAI), which is regarded as the most theoretically relevant cultural values to corporate strategic decisions and outcomes (e.g., Fu & Zhang 2019; Kwok & Tadesse, 2006; Li et al., 2013; Pour et al., 2023; Williams, 1999). Drawing upon upper echelons theory (Hambrick & Mason, 1984; Hambrick, 2007) and the cultural transmission argument (Bisin & Verdier, 2005; Guiso et al., 2006; Guiso,

Sapienza, & Zingales, 2015), I argue that CEOs' inherited cultural values—reflected in their uncertainty avoidance—shape sustainability preferences and influence corporate social and environmental performance. Furthermore, I posit two boundary conditions: first, that CEO bonuses strengthen the relationship between CEO UAI and corporate sustainability performance due to their emphasis on short-term bottom lines, and second, that newly appointed CEOs weaken this relationship through their willingness to experiment and reduced career concerns.

I test these theoretical predications using a sample of Fortune 500 companies from the period between 2009 and 2021. Since the U.S. has long been viewed as "a nation of immigrants," comprising individuals from various countries around the world (Farley & Alba, 2002), immigrants are encouraged to preserve their unique cultures, providing substantial variation in their cultural origins. Thus, the U.S. represents an ideal context in which to examine the link between CEOs' cultural heritages and firm-level outcomes. Focusing on CEOs' cultural origins and values within a single-country context (i.e., CEOs of different ancestries living in the same country) helps to distinguish the effects of cultural differences from institutional and economic differences, as compared to cross-country studies (Conyon, Haß, Vergauwe, & Zhang, 2019; Kleinhempel, Klasing, & Beugelsdijk, 2023; Pan, Siegel, & Wang, 2017). My findings indicate that firms led by CEOs with a higher UAI are negatively associated with firm environmental and social performance; in other words, the greater the UAI of CEOs, the poorer of corporate sustainability performance. Additionally, the negative effect of CEOs' UAI on corporate sustainability performance is more pronounced when the bonuses of focal CEOs constitute a larger proportion of their total annual compensation. Conversely, newly

appointed CEOs positively moderate the relationship between CEOs' UAI and corporate sustainability performance.

This study makes several contributions to the existing strategy and management literature. First, it extends upper echelons theory by identifying an important yet often overlooked time-invariant characteristic of CEOs—specifically, their cultural heritage—which influences corporate policy decisions and sustainability performance. In this regard, this study adds to the literature on the impact of corporate CEOs' time-invariant experiences and "managerial styles" on corporate policy decisions and outcomes (e.g., Benmelech & Frydman, 2015; Bernile et al., 2017; Koch-Bayram & Wernicke, 2018; Lewis, Walls, & Dowell, 2014; O'Sullivan et al., 2021; Xu & Ma, 2022). Second, this research reconciles conflicting findings in the literature regarding UAI's impact on sustainability (García-Sánchez et al., 2016; Halkos & Skouloudis, 2017; Ho et al., 2012; Miska et al., 2018; Parboteeah et al., 2012; Scholtens & Dam, 2007; Thanetsunthorn, 2015; Vachon, 2010; Williams, 1999). It introduces two important moderating variables—CEOs' newness and monetary incentives—that influence risk-taking and tolerance for uncertainty, while also highlighting one internal driver that shapes firms' sustainability preferences and illuminates why firms exhibit variation in sustainability performance (e.g., Burbano et al., 2024; Hawn et al., 2021; Miska et al., 2018; Xu & Ma, 2022). Finally, the study expands the discourse on cultural transmission by demonstrating that cultural values inherited from family can significantly impact firm-level sustainability outcomes. This finding suggests that cultural heritage not only shapes individual choices but also informs broader policy decisions that influence corporate sustainability efforts, thus contributing to the scant literature on how managers'

cultural heritages influence firm-level policies (Brochet et al., 2019; Fu & Zhang, 2019; Loi, Chen, & Qiao, 2023; Nguyen et al., 2018; Pham, Pham, & Truong 2022; Pan et al., 2017; Wang, Bena, & Lu, 2022).

THEORY AND HYPOTHESES

Cultural Transmission: The Influence of Managers' Cultural Heritage on Firm-Level Strategic Decisions and Outcomes

Culture is defined as "beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation" (Guiso et al., 2006, p. 23). As a result of social interactions across and within generations, preferences, beliefs, and norms often move with individuals and persist over time (Bisin & Verdier, 2005; Guiso, Sapienza, & Zingales, 2015). In other words, culture is learned and socially transmitted from parents to their children through the process of socialization. The cultural transmission argument emphasizes the essential role of intergenerational transmission, which creates inertia in the process of cultural change and contributes to the enduring cross-national differences in culture (Kleinhempel et al., 2023). Culture, particularly national cultural values, is deeply rooted and tends to be stable over time (Alesina, Giuliano, & Nunn, 2013; Beugelsdijk, Maseland, & Van Hoorn, 2015; Guiso et al., 2015). As a result, the descendants of immigrants often exhibit a degree of cultural distinctiveness that can be transmitted across several generations. These national cultural values are also important determinants of economic outcomes (Guiso et al., 2006; Schuler & Rogovsky, 1998; Tosi & Greckhamer, 2004).

Prior literature has confirmed that individuals' cultural heritages and inherited cultural values shape their working attitudes, preferences, and biases (Adams, Kräussl, Navone, & Verwijmeren, 2021; Liu, 2013; Pan, Siegel, & Wang, 2017). These factors, in turn, influence their economic decision-making and behaviors at the individual level, including the labor market participation and fertility choices of second-generation women (Alesina & Giuliano, 2010; Fernández & Fogli, 2009), occupational choices between self-employment and paid employment (Kleinhempel et al., 2023), art purchases and prices in auction transactions (Adams et al., 2021), and leadership styles (Daniels & Greguras, 2014). Collectively, these studies indicate that individuals' economic preferences and decision-making processes are partly shaped by their cultural heritage.

Building on prior literature that documents how individuals' cultures of origin affect personal economic decisions and behaviors, recent scholarship utilizing family-tree mapping to trace the cultural origins and ancestry of top executives and owners has confirmed that corporate managers' cultural backgrounds significantly influence firms' strategic decision-making and performance outcomes. These outcomes include accounting practices and risk-taking choices (Brochet et al., 2019; Fu & Zhang, 2019; Pan et al., 2017; Pham et al., 2022), cash holdings (Loi et al., 2023), financial performance (Nguyen et al., 2018), and within-firm pay inequality (Wang, Bena, & Lu, 2022). For example, the results of Pan et al. (2017) indicate that firms led by CEOs with a stronger tendency toward uncertainty avoidance tend to develop a more uncertainty-averse corporate culture. Consequently, compared to firms led by uncertainty-accepting CEOs, those led by uncertainty-avoiding CEOs invest less in research and development activities and make fewer acquisitions. In a similar vein, using

a sample of UK firms listed in FTSE during the period from 1999 to 2015, Fu and Zhang (2019) argue that CFOs with greater uncertainty avoidance may be highly risk-averse, tending to favor less risky projects. Their findings robustly support that a CFO's degree of uncertainty avoidance is negatively associated with the firm's stock price cash risk. Considering that CEOs with a higher degree of uncertainty avoidance are less tolerant of ambiguity and uncertainty, more recent studies find that high uncertainty-avoiding CEOs are associated with accounting conservatism, as reflected in reduced audit fees (Pham et al., 2022) and higher cash reserves (Loi et al., 2023).

CEOs' cultural origins have also been found to influence firms' bottom lines. Nguyen, Hagendorff, and Eshraghi (2018) examine the impacts of second- and third-generation immigrant CEOs on firm profitability in the U.S. banking industry. They find that, compared to the general population of CEOs, second- and third-generation immigrant CEOs are associated with a 6.2% higher return on assets (ROA) following industry regulation shocks. More importantly, they discover that cultural values are a key driver behind the effects of second- and third-generation immigrant CEOs on firms' financial performance. More recently, scholars have begun to focus on non-financial outcomes, such as pay inequalities. Utilizing a unique employee-employer matched dataset from Canada, Wang, Bena, and Lu (2022) find that immigrant owners from more individualism-oriented cultures place greater emphasis on high-powered and individualized monetary incentives to motivate employees in their career advancement, resulting in larger pay inequalities within firms compared to those owned by individuals from collectivistic cultures.

Collectively, these studies highlight that managers' cultures of origin and their

inherited national cultural values are important determinants of corporate strategic decisions and outcomes.

CEO uncertainty avoidance and corporate sustainability performance

Uncertainty avoidance refers to "the extent to which a society feels threatened by uncertain and ambiguous situations by providing career stability, establishing more formal rules, not tolerating deviant ideas and behaviors, and believing in absolute truths and the attainment of expertise" (Hofstede, 1980b, p. 46). This definition implies that societies with higher uncertainty avoidance impose more rules and standards and are fearful of change, while those that emphasize lower uncertainty avoidance are open to change and tend to challenge established social norms (Hofstede, 1994, 2001). According to cultural transmission arguments, it is reasonable to expect that individuals from cultures with origins that emphasize high levels of uncertainty avoidance are likely to exhibit similar values and behaviors. For example, individuals from high uncertainty-avoiding societies are less comfortable with ambiguity than those from low uncertainty-avoiding societies.

In this regard, stakeholders from high uncertainty-avoiding societies typically have lower expectations regarding sustainability initiatives and programs compared to those in countries with low uncertainty avoidance. In societies with a greater uncertainty avoidance value, companies are more likely to be compelled by legislation and regulations to engage in sustainability initiatives. In contrast, firms in low uncertainty-avoiding societies tend to go beyond mere compliance and are more likely to

pursue innovative strategies to enhance their sustainability performance (Garcia-Sanchez et al., 2016). For example, companies in low uncertainty-avoiding countries may strive to increase transparency in sustainability report disclosures or invest in green product innovation. In contrast, companies in high uncertainty-avoiding countries may focus primarily on adhering to environmental regulations and avoiding penalties from the government. Several cross-country studies linking societal uncertainty avoidance values and corporate sustainability performance demonstrate that companies located in high uncertainty-avoiding countries are negatively associated with sustainability performance (Garcia-Sanchez et al., 2016; Halkos & Skouloudis, 2017; Vachon, 2010; Williams, 1999).

Moreover, extant literature identifies uncertainty avoidance as a key national cultural dimension influencing risk-taking tendencies, with a high level of UAI often associated with risk aversion (Hofstede, 2001; Kwok & Tadesse, 2006; Li et al., 2013; Pan et al., 2017; Pour et al., 2023; Rieger et al., 2015; Shane, 1995). For instance, a large sample study involving more than 4,000 individuals from 68 different countries reveals that individuals from uncertainty-avoiding societies are less likely to pursue innovative championing roles due to their risk-averse nature (Shane, 1995). Additionally, evidence shows that uncertainty avoidance is significantly and negatively correlated with corporate risk-taking (Li et al., 2013; Rieger et al., 2015). Accordingly, CEOs with a higher UAI tend to cultivate a corporate culture characterized by risk aversion and conservatism, often leading to reactive strategies in addressing environmental and social issues.

However, achieving superior sustainability performance requires firms to proactively engage with various stakeholders and invest substantial resources. For

example, firms need to allocate resources toward environmental management to improve production processes, satisfy customer demands for green product innovation, reduce pollution through enhanced energy efficiency, and achieve climate-smart innovations (e.g., Awan, Arnold, & Gölgeci, 2021; Dangelico & Pujari, 2010; Sarpong et al., 2023). These sustainability investments are unlikely to yield immediate returns (Orlitzky et al., 2003) and are often associated with uncertain future outcomes (Slawinski & Bansal, 2015; Williams, 1999). It is plausible to posit that CEOs with a greater inclination toward uncertainty avoidance are correlated with lower investments in sustainability initiatives and a diminished commitment to sustainability programs, thereby hindering the company's willingness to embrace innovative sustainability practices and ultimately impairing its overall sustainability performance.

Collectively, both theories on national cultures and empirical evidence suggest that firms led by CEOs with cultural heritage from more uncertainty-avoiding societies tend to adopt moderate risk profiles and refrain from engaging in sustainability activities due to the uncertain nature of future returns (Slawinski & Bansal, 2015; Williams, 1999), which ultimately leads to poorer sustainability performance.

Hypothesis 1 (H1)*:* Firms led by CEOs with greater UAI are associated with lower sustainability performance than other firms.

The moderating role of CEO bonuses

I argue that a CEO with a high bonus may dampen the sustainability preferences and willingness to invest in sustainability initiatives among CEOs who exhibit strong

uncertainty avoidance. This prediction is primarily stemming from the performance-driven and short-term focused nature of bonus component (McGuire, Dow, & Argheyd, 2003; Murphy, 1999; Murphy, 2000; Stata & Maidique, 1980).

As an important component of CEO's total compensation, bonus is usually contingent upon short-term financial and strategic objectives (Murphy, 1999), rather than social objectives (Murphy, 2000). CEOs are rewarded bonus because of their achievements of firms' short-term targets rather than realizing the firms' long-term values (McGuire et al., 2003; Stata & Maidique, 1980). These arguments imply that CEOs tend to take short-term orientated decisions that are likely to boost current profits without considering for firms' future values when the total compensation is closely tight to current profits (Bebchuk et al., 2002; Fabrizi, Mallin, & Michelon, 2014; Kane, 2002; Mahoney & Thorn, 2006; McGuire et al., 2003). Sustainability initiatives and practices are not likely to yield immediate payoff and take longer time to reap benefits (Mahoney & Thorne, 2005; Orlitzky et al. 2003), CEOs with high bonuses are thus likely to view investments in sustainability as potentially conflicting actions.

Accordingly, a substantial bonus component in a CEO's total compensation signals a firm's performance-driven orientation (Mahoney & Thorne, 2005; McGuire et al., 2003) and may motivate CEOs with high bonuses to prioritize financial and strategic objectives, such as boosting current profits and satisfying shareholders, rather than engaging in sustainability investments that benefit other stakeholders. Supporting this argument, several empirical studies consistently show a negative association exists between CEO bonus and corporate social and environmental performance (Deckop, Merriman, & Gupta, 2006; Fabrizi et al., 2014; Manner, 2010).

Given the negative relationship between CEO UAI and corporate sustainability performance, along with the performance-driven and short-term focused nature of the bonus component, I postulate that CEO bonuses influence the relationship between CEO UAI and corporate sustainability performance. CEOs with higher bonuses tend to prioritize immediate bottom-line results, making it plausible to argue that such bonuses trigger greater incentives for managers to take fewer risks associated with sustainability engagement and investments. This dynamic reinforces the negative association between CEO UAI and corporate sustainability performance. Based on these arguments and evidence, I propose:

Hypothesis 2 (H2): CEO bonuses moderate the negative association between CEO UAI and corporate sustainability performance, such that this effect is stronger for firms led by CEOs with higher bonuses.

The moderating role of newly appointed CEO

While CEO monetary incentive may enhance the relationship between CEO UAI and corporate sustainability performance, I argue that newly appointed CEOs are likely to creating a countervailing force that weaken such relationship for two main reasons. First, most major actions are likely to initiated by CEOs during their first two and a half years in office (Gabarro, 1987), the interaction between CEO UAI and newly appointed CEOs is likely to operate through newly appointed CEOs' willingness to experiment (Miller & Shamsie, 2001), as well as their openness to strategic change (Finkelstein, Hambrick, & Cannella, 2009; Kelly, 1980). Newly appointed CEOs may interpret the casual ambiguity

between sustainability investments and associated financial returns differently. Supporting this argument, scholars have found that newly appointed CEOs are more likely to pursue innovative strategies (Bantel & Jackson, 1989). Accordingly, CEOs with greater UAI who are newly appointed are more likely to tolerate ambiguity situations and exhibit reduced risk aversion, making them more inclined to engage in activities that contribute to improved sustainability performance.

Second, compared with long-tenured CEOs or CEOs who are close to retirement, newly appointed CEOs usually have longer time horizon and may envision to stay with the current firm for a long time, therefore, newly appointed CEOs are more likely to be motivated to build legitimacy among all stakeholders. Engagement in sustainability activities is a crucial means of obtaining legitimacy and building reputation (Porter & Kramer, 2006); however, these efforts often take longer to yield benefits (Orlitzky et al., 2003). As a result, newly appointed CEOs are more likely to invest in sustainability initiatives than their departing counterparts. Supporting this argument, Fabrizi, Mallin, and Michelon (2014) show evidence that CEOs who have served in the company in their first year are positively associated with CSR engagement using a sample of U.S. firms across 5 years. Similarly, newly appointed CEOs are also found to be more likely to disclose environmental information voluntarily (Lewis et al., 2014). By contrast, CEOs who are closer to retirement are less likely to engage in CSR (Oh, Chang, & Cheng, 2016).

It is thus reasonable to expect that CEOs with greater UAI are more likely to have preferences for sustainability initiatives and contribute to superior corporate sustainability performance when they are newly appointed. Put it formally:

Hypothesis 3 (H3): Newly appointed CEOs moderate the negative association between CEO UAI and corporate sustainability performance, such that this effect is weaker for firms led by newly appointed CEOs.

METHOD

Data and Sample

I constructed a firm-year matched unbalanced dataset involving all companies that appeared in Fortune 500 list in year 2022 during the period from 2009 to 2021, the ranking is based on a firm's revenue in prior year, that's why my sample period ends in year 2021. Specifically, I identified the names of CEOs in each year via the BoardEx and Execucomp dataset as the first step. Second, I hand-collected CEOs' demographic attributes (e.g., age, gender, nationality and birthplace), educational backgrounds, compensation data (e.g., annual total salary and bonus), and other profiles (e.g., job titles, tenure) from multiple reliable sources, including the Execucomp, BoardEx, LinkedIn, and corporate websites.

Among various CEO-level characteristics in my dataset, identifying CEOs' countries of origin and their immigrant generations is the most challenging part. For each CEO in my sample, I manually collected information on CEOs' birthplace and nationality from various channels, including university webpages about notable alumni, interviews about the executives covered by business press, the Boardroom Insiders report, the New American Economy report, NNDB and Prabook. I also relied on the Worldnames database to trace the cultural origins of CEOs using their surname, which is similar to the

family-tree mapping approach. In some cases, I supplemented my data with publicly available information from Google and Wikipedia.

Then, I obtained environmental and social performance data from the Refinitiv (now as the LSEG Data & Analytics). I further added board-level data, which is obtained from the BoardEx. Finally, I merged the dataset with firm's financial and accounting information from the Compustat.

I relied on several screening criteria to get the final sample for analysis. First, I ruled out privately held or mutual-owned firms (13 firms), and then I removed firms not headquartered in the United States (Yum China Holdings and Autolive) to hold institutional, legal, and economic environment constant, 480 unique firms were identified at the first stage. I also deleted firms with interim CEOs and co-CEOs (105 firm-year observations in total). I further removed companies without data on total assets, number of employees, and sales (496 firm-year observations) and firms with missing ratings from the Refinitiv dataset (800 firm-year observations). These procedures lead to a final sample of 4839 firm-year matched observations including 425 distinct companies over the period 2009-2021.

Dependent variables

I relied on the ESG scores obtained from the Refinitiv to construct my dependent variables: *environmental performance* and *social performance*. Refinitiv is one of the most comprehensive and leading providers of corporate socio-environmental database and has been widely used in research on corporate social responsibility and sustainability

(e.g., Cheng, Ioannou, & Serafeim, 2014; Devos et al., 2024; Hawn et al., 2021; Ioannou & Serafeim, 2012; Nardi et al., 2022; Popli & Raithatha, 2023). Specifically, I used Refinitiv to collect data on firm's sustainability-related performance metrics in social and environment areas. Additionally, based on Edmans (2023)'s suggestion from his seminal paper "The End of ESG", I not only focus on the aggregate values of sustainability performance but also delve into its components under environmental pillar and social pillar.

Accordingly, I collected sub-categories in social and environmental pillar respectively. I obtained performance metrics in *workforce*, *human rights*, *community*, and *product responsibility* under the pillar of social aspect, and performance metrics in *resource use*, *emissions*, and *innovation* under the pillar of environmental aspect. All of these variables are continuous, ranging from 0 to 1. Higher score indicates better sustainability performance.

Independent variable

In line with previous studies on managers' uncertainty avoidance values and corporate outcomes (Fu & Zhang, 2019; Kanagaretnam et al., 2014; Loi et al., 2023; Nguyen et al., 2018; Pan et al., 2017; Pham et al., 2022; Pour et al., 2023), similarly, I relied on Hofstede's (1980a, 2001) cultural dimensions and obtained uncertainty avoidance index (UAI) from Hofstede Insights. UAI captures to what degree a culture tolerates uncertainty and unfamiliar situations. UAI is a continuous variable ranging from 0 to 1. Higher values on UAI indicate that individuals tend to feel threatened by ambiguous or

unfamiliar situations, and are more risk averse. Relevant to this study, CEOs with greater UAI may refrain from engaging in sustainability activities, which are associated with cost-benefit ambiguity (Slawinski & Bansal, 2015; Williams, 1999).

Moderators

Following with prior works on CEO compensation and CSR (e.g., Fabrizi et al., 2014; Jian & Lee, 2015; Mahoney & Thorn, 2006), I measured *CEO bonus ratio* as the bonus divided by the total compensation, in which total compensation is the sum of salary, bonus, other annual, total value of restricted stock granted, total value of stock options granted (using Black Scholes), long-term incentive payouts, and all other total ("TDC1" in the Execucomp dataset). Given that most CEOs tend to take major actions within the first two and half years (Gabarro, 1987), *New CEO* is a dummy variable, which takes the value 1 if the focal CEOs had been in office less than three years, and 0 otherwise, which is the same measure as used by Lewis et al. (2014). Alternatively, I used the cut-off value of two years (Zhang, 2008) to measure newly appointed CEO, producing similar results.

Control variables

I also include a range of controls that are commonly believed to correlate with executive characteristics that influence firm social and environmental performance. Prior works have shown that firms' intangibles and financial attributes are likely to confound the relationship between executive characteristics and CSR performance (Campbell, 2007; Hawn & Ioannou, 2016; Ioannou & Serafeim, 2012; Jiao, 2010; McWilliams & Siegel,

2001; Nwoba, Boso, & Robson, 2021; Surroca, Tribó & Waddock, 2010; Yuan et al., 2019), I include several important firm-level characteristics, including *firm size* (measured as the logarithmic transformation of total assets), *leverage* (measured as the sum of long-term debt and debt in current liabilities divided by the book value of total assets), *Tobin's Q* (measured as the market value of assets divided by the book value of assets), *ROA* (measured as the operating income divided by the total assets), *financial slack* (measured as the ratio of cash and short-term investments over total assets), *R&D intensity* (measured as the R&D expenditure divided by total assets), *advertising intensity* (measured as the advertising expenditure divided by total assets). Unfortunately, there are a lot of missing values on R&D and advertising expenditures in Compustat's data. Following the usual approach used in prior sustainability and CSR literature (e.g., Nardi et al., 2022), we coded these missing values as zero, but included corresponding dummies that took the value of 1 where data were missing. Previous research has documented the importance of firms' founding year in influencing firms' attitudes towards societal issues such as workplace diversity (Stainback, Tomaskovic-Devey, & Skaggs, 2010) and workplace status and power inequalities on the basis of sex and race (Stainback, Robsion, & Tomaskovic-Devey, 2005), I controlled for *firm age* (calculated as the sample year minus the founding year of the focal firm and then log-transformed).

With respect to CEO-level controls, upper echelons theory and related empirical studies highlight that CEOs' demographic characteristics, including gender, age, tenure, educational background, are highly relevant for CSR decisions and performance (Hambrick, 2007; Huang, 2013; Lewis et al., 2014; Oh et al., 2016), I therefore controlled for *female CEO* (a dummy variable which is coded as 1 if the focal CEO in a given year

in that company is a women and 0 if he is a man); whether the CEO has an *MBA degree* (0/1); *CEO age* (calculated as the sample year minus the birth year of the focal CEOs), and *CEO tenure* (measured by the number of years served as CEO in the focal firms). Recent studies have documented that founder CEO status play significant role in strategic choices and firm performance (see Abebe, Li, Acharya, & Daspit 2020 for a review), including social and environmental performance (Abebe & Acharya, 2022; Devos, Feng, Thompson, & Wei, 2024; Meier & Schier, 2022), I included *founder CEO* as an additional CEO-level control.

At the board level, given that prior literature has well documented that the presence of women on the board and board size jointly influence CSR (see Byron & Post, 206; and Endrikat et al., 2021 for meta-analyses), I included the gender ratio on the board (hereafter "*male director%*") and the number of directors on the board (*board size*). In addition, I added nationality mix ratio on the board (hereafter "*foreign director%*") as a control variable. Finally, I include industry fixed effects based on two-digit Standard Industry Classification (SIC) code and year fixed effects across all regression models to control for any common trends (e.g., macro-economic conditions, business cycles) in the sustainability performance over time or between industries.

Estimation strategy

The U.S. has long been characterized as a nation of immigrants and comprised of immigrants from various countries, making the U.S. an ideal and appropriate context to study the influence of CEOs' cultural origins over firm-level outcomes. This study

employs the “epidemiological approach” that focusing on the relationship between migrants’ national cultures and economic outcomes (Fernandez, 2011; Nollenberger, Rodriguez-Planas, & Sevilia, 2016). This approach offers several advantages that could help address endogeneity issues. First, by focusing on a sample of CEOs of different ancestors but residing in one single country context, this study secures a comparable sample because these CEOs are resided in the same host country and they are exposed to the same host-country institutions. Second, this design could also help to avoid correlated omitted variables problems of multi-country studies given the fact that different countries have different legal, regulatory, political, cultural, and economic conditions (Conyon et al., 2019; Kleinhempel et al., 2023). Third, this design mitigates concerns for reverse causality because corporate sustainability performance of firms is unlikely to affect culture of CEOs’ country of origin.

Given that my dataset is a firm-year matched unbalanced panel data and my key independent variable (i.e., CEO’s cultural origin and cultural values) rarely change over time, I used random-effects regressions for the main analysis. To validate the appropriateness of random-effects model over OLS regression in the current study, I have also conducted the Lagrangian multiplier (LM) test (using “*xttest0*” code in STATA). The Breusch and Pagan LM test for random effects rejected the null hypothesis, suggesting that there are significant differences across firms and therefore random-effects model is preferred over OLS model. Although the likelihood that corporate sustainability performance may influence the appointment of CEOs from certain cultural origins is very low, I employed a lead-lag data structure to mitigate concerns over reverse causality: all dependent variables are measured in year t+1 while all independent and control variables

are measured in year t. In all models, I also clustered standard errors at the firm level and used robust standard errors to mitigate concerns for heteroskedasticity and autocorrelation in the data.

RESULTS

Table 1 displays the distribution of CEO's countries of origin, in which India, Canada, United Kingdom, Australia, Germany, South Africa, and Taiwan are the most represented among the non-U.S. origins. Panel A of Table 2 displays mean and standard deviation of main variables used in this paper. The variable "*Environmental performance*" has a mean value of 0.593 and a standard deviation of 0.341. The variable "*Social performance*" has a mean of 0.65 and a standard deviation of 0.263. The mean value of CEO_UAI is 0.475. CEO bonus ratio has a mean value of 0.021 and a standard deviation of 0.079, suggesting that there are large variations across CEOs' annual bonus. About 28.5% of CEOs in this sample is newly appointed and had been in office for less than 3 years. The other variables' descriptive statistics are also comparable with those in prior literature, for instance, ROA is on average positive for the analyzed sample of the largest U.S. corporations (e.g., Crossland et al., 2014; Sarker & Elnahas, 2024). Panel B of Table 2 displays the first-order Person correlation matrix of main variables. I also checked for multicollinearity and the diagnostic test indicated that the mean variance inflation factors (VIF) always below the threshold value of 5, multicollinearity issues don't appear to be a serious concern in my empirical analysis.

Insert Table 1 and Table 2 about here

Table 3 presents the main regression results of composite environmental performance and three different sub-themes under the environment pillar on CEO UAI. According to Model 1, the coefficient on CEO_UAI is negative and significantly associated with environment score (b = -0.203, p = 0.003), the magnitude on the coefficient is not small given that the average environment score is 0.594. With respect to economic significance, the effect of one standard deviation (0.080) increase in CEO UAI leads to 0.203 × 0.08 = 0.016 decrease in environmental performance. This is primarily driven by the environmental resource use, as shown in Model 2, one standard deviation increase in CEO UAI is significantly associated with 0.197 × 0.080 = 0.016 decrease in performance on environmental resource use (p = 0.004). With respect to other dimensions of composite environmental performance, I didn't find any statistically significant association between CEO UAI and emissions (b = -0.114, p = 0.117), as well as innovation (b = -0.087, p = 0.249), despite the sign on the coefficient of CEO UAI is as expected. Table 4 reports OLS regression results on the relationship between CEO UAI and social performance. I didn't find any evidence supporting that CEO UAI is negatively associated with social performance except for the workforce dimension (Model 2), in which CEO with stronger UAI is negatively associated with performance on workforce diversity (b = -0.141, p = 0.037). I also calculated the economic effect size, one standard deviation (0.080) increase in CEO UAI leads to 0.141 × 0.080 = 0.011 decrease in social performance on workforce diversity. These results generally support

my hypothesis 1, particularly for environmental performance.

Hypothesis 2 predicts that CEO annual bonus will strengthen the negative association between CEO UAI and corporate sustainability performance. Table 5 and Table 6 report regression results for hypothesis 2. Specifically, according to Models 1-3 in Table 5, the coefficient on the interaction term "*CEO_UAI*CEO bonus ratio*" is negative and statistically significant for the overall environmental performance (b = -1.309, p = 0.002), resource use (b = -0.975, p = 0.056), and emissions (b = -1.312, p = 0.002). With respect to social performance, although I didn't find a significant direct relationship between CEO UAI and social performance, Model 1 of Table 6 that CEOs with stronger UAI are negatively associated with firm social performance when the focal CEOs' bonus account for larger proportion of their annual total compensation (b = -0.819, p = 0.035). In addition, there is also evidence (See Model 3 in Table 6) indicating that CEOs with larger bonus ratio is negatively moderating the relationship between CEO UAI and performance on human rights (b = -1.525, p = 0.009). In general, these results support my hypothesis 2.

Hypothesis 3 expects that newly appointed CEO will positively moderate the relationship between CEO UAI and corporate sustainability performance, making the association positive. With respect to environmental performance, the coefficient on the interaction term "*CEO_UAI*New CEO*" is positive across all models in Table 7, which is in line with my expectation. I fail to find "*CEO_UAI*New CEO*" is significantly associated with the overall environmental performance (b = 0.125, p = 0.177) and (b = 0.086, p = 0.562). However, results in Model 2 and Model 3 indicate that "*CEO_UAI*New CEO*" is positively and significant related to resource use (b = 0.161, p

= 0.090) and emissions (b = 0.261, p = 0.013) respectively. With respect to social performance, a positive and statistically significant association only exists between "*CEO_UAI*New CEO*" and community (b = 0.125, p = 0.069), which is shown in Model 4 of Table 8. Hypothesis 3 is thus partially supported. Figures 1 to 8 provide graphical support for hypothesis 2 and hypothesis 3. To further validate the results for hypothesis 2 and hypothesis 3, I included "*CEO_UAI*CEO bonus ratio*" and "*CEO_UAI*New CEO*" in the same regression models, which produce similar results (Appendix Table A and Table B).

Insert Tables 3 – 8, and Figures 1 – 8 about here

Robustness Checks

I also conducted several additional analyses to show the robustness of my results. First, in addition to employing panel OLS regression with random effects, I utilized a firm fixed effects model to account for unobserved and time-invariant factors (e.g., management quality, corporate culture) that may influence the appointment of CEOs with specific characteristics, such as prioritizing ESG objectives, which in turn may further impact a firm's sustainability performance. Results from OLS regression with firm fixed effects are reported from Table 9 to Table 14, which produce similar results in terms of both coefficient size and level of statistical significance. Second, it is likely that other national cultural values of CEOs may simultaneously influence corporate sustainability performance. More importantly, the primary focus of the current paper is to examine the

effect of CEOs' UAI net of other cultural effects. As a robustness check, I added five additional Hofstede's (1980a, 2001) cultural dimensions: power distance (which describes society's acceptance of human inequality in terms of power, wealth, and prestige), individualism (versus collectivism), masculinity (versus femininity), long-term orientation (versus short-term orientation), and indulgence (versus restraint) in the regression models. My results did not change substantially (Appendix Tables C to H). Third, I included the three-digit SIC code rather than the two-digit SIC code used in the main analysis as industry fixed effects in my regression models. The use of alternative industry codes produced results that are both qualitatively and quantitatively similar (Appendix Tables I to N).

Insert Tables 9 -14 about here

DISCUSSION AND CONCLUSION

Utilizing 13 years of data from a sample of 425 unique Fortune 500 firms, this study investigates the relationship between the cultural background of CEOs and corporate sustainability performance. It highlights a potential underlying mechanism through which CEOs influence their firms' environmental and social performance. Specifically, I find robust evidence that CEOs from cultural backgrounds characterized by high uncertainty avoidance are negatively associated with corporate sustainability performance. Furthermore, evidence suggests that the negative association between the uncertainty avoidance index of CEOs and corporate sustainability performance is stronger when

CEOs receive a higher bonus ratio and weaker when they are newly appointed.

Contributions

This study makes several contributions to extant strategy and management literature. First, in a broad way, this study adds to literature on the impact of corporate CEOs' time-invariant experiences and "managerial styles" on corporate policy decisions and outcomes (Benmelech & Frydman, 2015; Bernile, Bhagwat, & Rau, 2017; Koch-Bayram & Wernicke, 2018; Lewis, Walls, & Dowell, 2014; O'Sullivan et al., 2021; Xu & Ma, 2022). Specifically, this paper extends upper echelons theory by identifying one important yet often overlooked time-invariant characteristic of CEOs (i.e., CEO's cultural heritage) and demonstrates how CEOs' cultural backgrounds—as indicated by CEO's UAI—likely to have a detectable impact on corporate sustainability performance.

Second, by examining the boundary conditions between CEO UAI and corporate social and environmental performance, the current study extends the literature linking national culture values and sustainability performance in two significant ways. First, extant literature exploring the relationship between UAI and sustainability performance yields rather inconclusive results. While some studies demonstrate a positive association (Ho et al., 2012; Miska et al., 2018), this association appears applicable only to a limited number of sustainability dimensions (Scholtens & Dam, 2007; Thanetsunthorn, 2015) or is contingent on countries' GDP per capita (Gallén & Peraita, 2018). Conversely, other studies find that UAI does not significantly correlate with sustainability performance (Parboteeah et al., 2012), and some report a negative association between UAI and

sustainability performance (García-Sánchez et al., 2016; Halkos & Skouloudis, 2017; Vachon, 2010; Williams, 1999). In this regard, this study reconciles these contradictory findings by introducing two theoretically meaningful variables that are likely to moderate risk-taking and tolerance for uncertainty: CEOs' newness and monetary incentives. Second, previous research has predominantly focused on cross-country analyses and how firms are influenced by informal institutions (e.g., national culture) in promoting sustainability initiatives or enhancing sustainability performance. In contrast, this study emphasizes how CEO's cultural values, inherited from their countries of origin, explain the heterogeneities in sustainability performance within a single country context. This focus contributes to our understanding of the internal drivers and micro-foundations that shape firms' sustainability preferences and elucidates why firms exhibit variation in sustainability performance (e.g., Burbano et al., 2024; Hawn et al., 2021; Miska et al., 2018; Xu & Ma, 2022).

Finally, the cultural transmission argument suggests that the descendants of immigrants exhibit a degree of cultural distinctiveness, which may be transmitted across several subsequent generations and influence individual-level economic behaviors, such as second-generation women's labor market participation and fertility choices (Alesina & Giuliano, 2010; Fernández & Fogli, 2009). This paper also documents that CEOs' cultural values, inherited and learned from their families, can have a long-lasting impact on firm sustainability performance. This finding implies that cultural heritage may extend beyond personal choices to influence firm-level policy decisions and outcomes (Fu & Zhang, 2019; Guiso et al., 2006; Kanagaretnam et al., 2014; Loi et al., 2023; Nguyen et al., 2018; Pham et al., 2022; Pan et al., 2017).

Limitations and Future Research Directions

The current study is not without limitations. First, the current study examines CEO annual bonuses as one measure of monetary incentive, which is closely linked to current profits. The corporate landscape is increasingly tying executive incentive plans to ESG performance (Spierings, 2022). Recent research has shown that incorporating ESG performance into CEOs' compensation can align the objectives of firm management with the preferences of specific shareholder groups (Cohen et al., 2023). Consequently, CEOs may feel a stronger motivation to enhance corporate sustainability performance due to the alignment between their incentives and the firm's sustainability objectives, ultimately leading to improved corporate sustainability performance (Zhu et al., 2024). Future research could investigate whether the adoption of ESG-related pay influences CEOs' preferences for sustainability and moderates the relationship between CEO UAI and corporate sustainability performance. Second, using Hofstede's cultural framework, this paper examines the net effect of CEOs' UAI on corporate sustainability performance while controlling for other cultural values. While Hofstede's cultural framework is one of the most recognized datasets for measuring individuals' cultural values based on their countries of origin, future research could employ the World Values Survey, the Corruption Perceptions Index, or the United Nations' Gender Inequality Index to explore how other distinct cultural values relate to corporate sustainability performance and other firm-level outcomes. Third, this study doesn't allow us to interpret it causally because it not feasible to randomly assign CEOs of high UAI versus low UAI in the real business world. Future research could employ field or lab experiments in a sample of business

students to infer firmer evidence of causation (e.g., Burbano et al., 2021). Finally, the current study utilizes a sample of Fortune 500 firms in the U.S., which may limit the external validity of the findings. While the results can be generalized to the largest U.S. firms based on total revenues, this may not hold true for small and medium-sized enterprises (SMEs) or start-ups. Additionally, it is important to investigate whether the results apply to other countries with a high proportion of immigrant executives or owners, such as Canada, the United Kingdom and Sweden. To enhance the generalizability of these findings, future research could replicate the study using samples of new ventures, SMEs, or in countries with significant immigrant populations.

Conclusion

My results can be summarized as follows: Firms led by CEOs with a stronger uncertainty avoidance index are negatively associated with corporate sustainability performance, particularly regarding environmental performance. Furthermore, firms led by CEOs with a stronger uncertainty avoidance index exhibit poorer environmental and social performance compared to other firms when the focal CEOs' bonuses account for a larger proportion of their annual total compensation. Finally, newly appointed CEOs positively moderate the relationship between CEOs' UAI and several subcomponents of social and environmental performance, including environmental resource use, emissions, and community relations. Specifically, firms led by CEOs with a stronger UAI are positively associated with performance in environmental resource use, emissions, and community relations when the focal CEOs have been in office for less than three years.

REFERENCES

Abebe, M. A., & Acharya, K. 2022. Founder CEOs and corporate environmental violations: Evidence from S&P 1500 firms. *Business Strategy and the Environment*,

31(3): 1204-1219.

Abebe, M. A., Li, P., Acharya, K., & Daspit, J. J. 2020. The founder chief executive officer: A review of current insights and directions for future research. *Corporate Governance: An International Review*, 28(6): 406-436.

Adams, R. B., Kräussl, R., Navone, M., & Verwijmeren, P. 2021. Gendered prices. *The Review of Financial Studies,* 34(8): 3789-3839.

Alesina, A., & Giuliano, P. 2010. The power of the family. *Journal of Economic Growth*, 15(2): 93-125.

Alesina, A., Giuliano, P., & Nunn, N. 2013. On the origins of gender roles: Women and the plough. *The Quarterly Journal of Economics*, 128(2): 469-530.

Awan, U., Arnold, M. G., & Gölgeci, I. (2021). Enhancing green product and process innovation: Towards an integrative framework of knowledge acquisition and environmental investment. *Business Strategy and the Environment*, *30*(2), 1283-1295.

Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking: does the composition of the top team make a difference?. *Strategic Management Journal*, *10*(S1), 107-124.

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good? Addressing the shape of the relationship between social and financial performance. *Strategic Management Journal*, *33*(11), 1304-1320.

Bebchuk, L. A., Fried, J., & Walker, D. (2002). Managerial power and rent extraction in the design of executive compensation. *NBER Working Paper.*

Benmelech, E., & Frydman, C. (2015). Military CEOs. *Journal of Financial Economics*, 117(1): 43-59.

Bernile, G., Bhagwat, V., & Rau, P. R. (2017). What doesn't kill you will only make you more risk-loving: Early-life disasters and CEO behavior. *The Journal of Finance*, 72(1): 167-206.

Beugelsdijk, S., Maseland, R., & Van Hoorn, A. (2015). Are Scores on Hofstede's Dimensions of National Culture Stable over Time? A Cohort Analysis. *Global Strategy Journal*, 5(3): 223-240.

Bisin, A., & Verdier, T. (2005). Cultural transmission. *The New Palgrave Dictionary of Economics*.

Brochet, F., Miller, G. S., Naranjo, P., & Yu, G. (2019). Managers' cultural background

and disclosure attributes. *The Accounting Review*, 94(3): 57-86.

Burbano, V. C., Delmas, M. A., & Cobo, M. J. (2024). The past and future of corporate sustainability research. *Organization & Environment*, *37*(2), 133-158.

Byron, K., & Post, C. (2016). Women on boards of directors and corporate social performance: A meta-analysis. *Corporate Governance: An International Review*, *24*(4), 428-442.

Cai, Y., Pan, C. H., & Statman, M. (2016). Why do countries matter so much in corporate social performance?. *Journal of Corporate Finance*, 41: 591-609.

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946-967.

Caprar, D. V., & Neville, B. A. (2012). "Norming" and "conforming": Integrating cultural and institutional explanations for sustainability adoption in business. *Journal of Business Ethics*, 110(2): 231-245.

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic Management Journal*, 35(1): 1–23.

Cohen, S., Kadach, I., Ormazabal, G., & Reichelstein, S. (2023). Executive compensation tied to ESG performance: International evidence. *Journal of Accounting Research*, *61*(3), 805-853.

Conyon, M. J., Hass, L. H., Vergauwe, S., & Zhang, Z. (2019). Foreign experience and CEO compensation. *Journal of Corporate Finance*, 57: 102-121.

Crossland, C., Zyung, J., Hiller, N. J., & Hambrick, D. C. (2014). CEO career variety: Effects on firm-level strategic and social novelty. *Academy of Management Journal*, 57(3): 652-674.

Dangelico, R. M., & Pujari, D. (2010). Mainstreaming green product innovation: Why and how companies integrate environmental sustainability. *Journal of Business Ethics*, *95*, 471-486.

Daniels, M. A., & Greguras, G. J. (2014). Exploring the nature of power distance: implications for micro- and macro-level theories, processes, and outcomes. *Journal of Management*, 40(5): 1202-1229.

Deckop, J. R., Merriman, K. K., & Gupta, S. (2006). The effects of CEO pay structure on corporate social performance. *Journal of Management*, *32*(3), 329-342.

Devos, E., Feng, Z., Thompson, L., & Wei, Z. (2024). Founder CEOs and

ESG. *International Review of Economics & Finance*, *94*, 103407.

Dial, L. C., Crowley, D. F. C., McCoy, J. R., & Chainey, B. R. (2023, July 25). *2023 ESG state legislation wrap up*. US Asset Management and Investment Funds Alert. K&L Gates. https://perma.cc/2JTC-5795

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2): 130-141.

Edmans, A. (2023). The end of ESG. *Financial Management*, *52*(1), 3-17.

Endrikat, J., De Villiers, C., Guenther, T. W., & Guenther, E. M. (2021). Board characteristics and corporate social responsibility: A meta-analytic investigation. *Business & Society*, *60*(8), 2099-2135.

Fabrizi, M., Mallin, C., & Michelon, G. (2014). The role of CEO's personal incentives in driving corporate social responsibility. *Journal of Business Ethics*, *124*, 311-326.

Farley, R., & Alba, R. (2002). The new second generation in the United States. *International Migration Review*, 36(3): 669-701.

Fernández, R. (2011). Does culture matter?. *Handbook of Social Economics*, *1*, 481-510.

Fernández, R., & Fogli, A. (2009). Culture: An empirical investigation of beliefs, work, and fertility. *American Economic Journal: Macroeconomics*, 1(1): 146-77.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic leadership: Theory and research on executives, top management teams, and boards*. Oxford University Press.

Fu, X., & Zhang, Z. (2019). CFO cultural background and stock price crash risk. *Journal of International Financial Markets, Institutions and Money*, 62: 74-93.

Gabarro JJ. 1987. *The Dynamics of Taking Charge*. Harvard Business School Press: Boston, MA.

Gallén, M. L., & Peraita, C. (2018). The effects of national culture on corporate social responsibility disclosure: a cross-country comparison. *Applied Economics*, *50*(27), 2967-2979.

García-Sánchez, I. M., Cuadrado-Ballesteros, B., & Frias-Aceituno, J. V. (2016). Impact of the institutional macro context on the voluntary disclosure of CSR information. *Long Range Planning*, *49*(1), 15-35.

Guiso, L., Sapienza, P., & Zingales, L. (2006). Does culture affect economic outcomes?. *Journal of Economic Perspectives*, 20(2): 23-48.

Guiso, L., Sapienza, P., & Zingales, L. (2015). Corporate culture, societal culture, and institutions. *American Economic Review*, 105(5): 336-39.

Halkos, G., & Skouloudis, A. (2017). Revisiting the relationship between corporate social responsibility and national culture: A quantitative assessment. *Management Decision*, *55*(3), 595-613.

Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, *32*(2), 334-343.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, *9*(2), 193-206.

Hawn, O., Burbano, V., & Moulton-Tetlock, E. (2021). Future Orientation, Leadership Gender, and Corporate Social Responsibility: Evidence from Mixed Methods. *Working Paper*.

Hawn, O., & Ioannou, I. (2016). Mind the gap: The interplay between external and internal actions in the case of corporate social responsibility. *Strategic Management Journal*, *37*(13), 2569-2588.

Ho, F. N., Wang, H. M. D., & Vitell, S. J. (2012). A global analysis of corporate social performance: The effects of cultural and geographic environments. *Journal of Business Ethics*, *107*, 423-433.

Hofstede, G. (1980a). *Culture's consequence*. New York: Sage.

Hofstede, G. (1980b). Motivation, leadership, and organization: do American theories apply abroad?. *Organizational Dynamics*, *9*(1), 42-63.

Hofstede, G. (1994). Management scientists are human. *Management Science*, *40*(1), 4-13.

Hofstede, G. (2001). *Culture's consequences: comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, CA: Sage Publications.

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, 43(9): 834-864.

Jian, M., & Lee, K. W. (2015). CEO compensation and corporate social responsibility. *Journal of Multinational Financial Management*, *29*, 46-65.

Jiao, Y. (2010). Stakeholder welfare and firm value. *Journal of Banking & Finance*, *34*(10), 2549-2561.

Kanagaretnam, K., Lim, C. Y., & Lobo, G. J. (2014). Influence of national culture on

accounting conservatism and risk-taking in the banking industry. *The Accounting Review*, *89*(3), 1115-1149.

Kane, E. J. (2002). Using deferred compensation to strengthen the ethics of financial regulation. *Journal of Banking & Finance*, *26*(9), 1919-1933.

Kelly, J. N. (1980). Management transitions for newly appointed CEOs. *Sloan Management Review (pre-1986)*, *22*(1), 37.

King, T., Srivastav, A., & Williams, J. (2016). What's in an education? Implications of CEO education for bank performance. *Journal of Corporate Finance*, 37: 287-308.

Kleinhempel, J., Klasing, M. J., & Beugelsdijk, S. (2023). Cultural roots of entrepreneurship: Evidence from second-generation immigrants. *Organization Science*, *34*(5), 1800-1819.

Koch-Bayram, I. F., & Wernicke, G. (2018). Drilled to obey? Ex-military CEOs and financial misconduct. *Strategic Management Journal*, 39(11): 2943-2964.

Kwok, C. C., & Tadesse, S. (2006). National culture and financial systems. *Journal of International Business Studies*, *37*, 227-247.

KPMG. (2022). Big shifts, small steps: Survey of sustainability reporting 2022. KPMG International.https://kpmg.com/xx/en/our-insights/esg/survey-of-sustainability-reporting-2022.html

Lewis, B. W., Walls, J. L., & Dowell, G. W. (2014). Difference in degrees: CEO characteristics and firm environmental disclosure. *Strategic Management Journal*, 35(5): 712-722.

Li, K., Griffin, D., Yue, H., & Zhao, L. (2013). How does culture influence corporate risk-taking?. *Journal of Corporate Finance*, *23*, 1-22.

Liu, X. (2013). Cultural origins and CEO incentive contracts. *Unpublished Working Paper*.

Loi, F. L., Chen, J. J., & Qiao, Z. (2023). CEO cultural background and corporate cash holdings. *Accounting & Finance*, *63*, 1069-1100.

Mahoney, L. S., & Thorne, L. (2005). Corporate social responsibility and long-term compensation: Evidence from Canada. *Journal of Business Ethics*, *57*, 241-253.

Mahoney, L. S., & Thorn, L. (2006). An examination of the structure of executive compensation and corporate social responsibility: A Canadian investigation. *Journal of Business Ethics*, *69*, 149-162.

Manner, M. H. (2010). The impact of CEO characteristics on corporate social

performance. *Journal of Business Ethics*, *93*, 53-72.

McGuire, J., Dow, S., & Argheyd, K. (2003). CEO incentives and corporate social performance. *Journal of Business Ethics*, *45*, 341-359.

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, *26*(1), 117-127.

Meier, O., & Schier, G. (2022). Lone founders, family founders, and corporate social responsibility. *Journal of Business Research*, *148*, 149-160.

Miller, D., & Shamsie, J. (2001). Learning across the life cycle: Experimentation and performance among the Hollywood studio heads. *Strategic Management Journal*, *22*(8), 725-745.

Miska, C., Szőcs, I., & Schiffinger, M. (2018). Culture's effects on corporate sustainability practices: A multi-domain and multi-level view. *Journal of World Business*, 53(2): 263-279.

Murphy, K. J. (1999). Executive compensation. *Handbook of Labor Economics*, *3*, 2485-2563.

Murphy, K. J. (2000). Performance standards in incentive contracts. *Journal of Accounting and Economics*, *30*(3), 245-278.

Nardi, L., Zenger, T., Lazzarini, S. G., & Cabral, S. (2022). Doing well by doing good, uniquely: Materiality and the market value of unique CSR strategies. *Strategy Science*, *7*(1), 10-26.

Neubaum, D. O., & Zahra, S. A. (2006). Institutional ownership and corporate social performance: The moderating effects of investment horizon, activism, and coordination. *Journal of Management*, *32*(1), 108-131.

Nguyen, D. D., Hagendorff, J., & Eshraghi, A. (2018). Does a CEO's cultural heritage affect performance under competitive pressure?. *The Review of Financial Studies*, 31(1): 97-141.

Nollenberger, N., Rodríguez-Planas, N., & Sevilla, A. (2016). The math gender gap: The role of culture. *American Economic Review*, *106*(5), 257-261.

Nwoba, A. C., Boso, N., & Robson, M. J. (2021). Corporate sustainability strategies in institutional adversity: Antecedent, outcome, and contingency effects. *Business Strategy and the Environment*, *30*(2), 787-807.

Oh, W. Y., Chang, Y. K., & Cheng, Z. (2016). When CEO career horizon problems matter for corporate social responsibility: The moderating roles of industry-level discretion

and blockholder ownership. *Journal of Business Ethics*, *133*, 279-291.

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*(3), 403-441.

O'Sullivan, D., Zolotoy, L., & Fan, Q. (2021). CEO early-life disaster experience and corporate social performance. *Strategic Management Journal*, 42(11): 2137-2161.

Pan, Y., Siegel, S., & Wang, T. Y. 2017. Corporate risk culture. *Journal of Financial and Quantitative Analysis*, 52(6): 2327-2367.

Parboteeah, K. P., Addae, H. M., & Cullen, J. B. (2012). Propensity to support sustainability initiatives: A cross-national model. *Journal of Business Ethics*, *105*, 403-413.

Petrenko, O. V., Aime, F., Recendes, T., & Chandler, J. A. (2019). The case for humble expectations: CEO humility and market performance. *Strategic Management Journal*, 40(12): 1938-1964.

Petrenko, O. V., Aime, F., Ridge, J., & Hill, A. (2016). Corporate social responsibility or CEO narcissism? CSR motivations and organizational performance. *Strategic Management Journal*, 37(2): 262-279.

Pham, A. V., Pham, M. H., & Truong, C. (2022). CEO cultural heritage and the pricing of audit services. *Journal of Business Finance & Accounting*, *49*(1-2), 181-214.

Phillips, D. J. (2005). Organizational genealogies and the persistence of gender inequality: The case of Silicon Valley law firms. *Administrative Science Quarterly*, 50(3): 440-472.

Popli, M., & Raithatha, M. (2023). Implications of overwhelmed leadership: How executive job demands hinder corporate sustainability performance. *Business & Society*, *62*(5), 1031-1068.

Porter M, Kramer M. (2006). Strategy & society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84:78–92.

Pour, E. K., Uddin, M., Murinde, V., & Amini, S. (2023). CEO power, bank risk-taking and national culture: International evidence. *Journal of Financial Stability*, *67*, 101133.

Rieger, M. O., Wang, M., & Hens, T. (2015). Risk preferences around the world. *Management Science*, *61*(3), 637-648.

Sarker, M. S. R., & Elnahas, A. (2024). CEO Cultural Heritage, Corporate Social Responsibility, and Firm Value. *Available at SSRN 4839500*.

Sarpong, D., Boakye, D., Ofosu, G., & Botchie, D. (2023). The three pointers of research and development (R&D) for growth-boosting sustainable innovation system. *Technovation*, *122*, 102581.

Schneider, B., Ehrhart, M. G., & Macey, W. H. (2013). Organizational climate and culture. *Annual Review of Psychology*, 64: 361-388.

Scholtens, B., & Dam, L. (2007). Cultural values and international differences in business ethics. *Journal of Business Ethics*, *75*, 273-284.

Schuler, R. S., & Rogovsky, N. (1998). Understanding compensation practice variations across firms: the impact of national culture. *Journal of International Business Studies*, 29(1): 159-177.

Shane, S. (1995). Uncertainty avoidance and the preference for innovation championing roles. *Journal of International Business Studies*, *26*, 47-68.

Sharma, S., & Henriques, I. (2005). Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic Management Journal*, *26*(2), 159-180.

Slawinski, N., & Bansal, P. (2015). Short on time: Intertemporal tensions in business sustainability. *Organization Science*, *26*(2), 531-549.

Spierings, M. (2022, October). Linking executive compensation to ESG performance. In *Harvard Law School Forum on Corporate Governance*.

Stainback, K., Robinson, C. L., & Tomaskovic-Devey, D. (2005). Race and workplace integration: A politically mediated process?. *American Behavioral Scientist*, 48(9): 1200-1228.

Stainback, K., Tomaskovic-Devey, D., & Skaggs, S. (2010). Organizational approaches to inequality: Inertia, relative power, and environments. *Annual Review of Sociology*, 36(1): 225-247.

Stata, R., & Maidique, M. A. (1980). Bonus system for balanced strategy. *Harvard Business Review*, *58*(6), 156-163.

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, *31*(5), 463-490.

Thanetsunthorn, N. (2015). The impact of national culture on corporate social responsibility: Evidence from cross-regional comparison. *Asian Journal of Business Ethics*, *4*, 35-56.

Tosi, H. L., & Greckhamer, T. (2004). Culture and CEO compensation. *Organization Science*, 15(6): 657-670.

Vachon, S. (2010). International operations and sustainable development: Should national culture matter?. *Sustainable Development*, *18*(6), 350-361.

Venable, K. (2024). From Anti-BDS to Anti-ESG: The Next Generation of Boycotting the" Boycott" Is Only Slightly less Problematic. *Wash. & Lee L. Rev.*, *81*, 1687.

Velte, P. (2020). Do CEO incentives and characteristics influence corporate social responsibility (CSR) and vice versa? A literature review. *Social Responsibility Journal*, *16*(8), 1293-1323.

Waldman, D. A., & Siegel, D. (2008). Defining the socially responsible leader. *The Leadership Quarterly*, *19*(1), 117-131.

Waldman, D. A., Siegel, D. S., & Javidan, M. (2006a). Components of CEO transformational leadership and corporate social responsibility. *Journal of Management Studies*, *43*(8), 1703-1725.

Waldman, D. A., Sully de Luque, M., Washburn, N., House, R. J., Adetoun, B., Barrasa, A., ... & Wilderom, C. P. (2006b). Cultural and leadership predictors of corporate social responsibility values of top management: A GLOBE study of 15 countries. *Journal of International Business Studies*, *37*, 823-837.

Wang, I., Bena, J., & Lu, G. 2022. Owner Culture and Pay Inequality within Firms. *Working Paper*, available at https://ssrn.com/abstract=4071250.

Wang, G., Devine, R. A., Molina-Sieiro, G., & Holmes Jr, R. M. (2024). Strategic leaders and corporate social responsibility: A meta-analytic review. *Journal of Management*, *50*(7), 2675-2714.

Wang, Q., Dou, J., & Jia, S. (2016). A meta-analytic review of corporate social responsibility and corporate financial performance: The moderating effect of contextual factors. *Business & Society*, *55*(8), 1083-1121.

Wernicke, G., Sajko, M., & Boone, C. (2022). How much influence do CEOs have on company actions and outcomes? The example of corporate social responsibility. *Academy of Management Discoveries*, *8*(1), 36-55.

Williams, S. M. (1999). Voluntary environmental and social accounting disclosure practices in the Asia-Pacific region: An international empirical test of political economy theory. *The International Journal of Accounting*, *34*(2), 209-238.

Xu, S., & Ma, P. (2022). CEOs' poverty experience and corporate social responsibility: Are CEOs who have experienced poverty more generous?. *Journal of Business*

Ethics, *180*(2): 747-776.

Yuan, Y., Tian, G., Lu, L. Y., & Yu, Y. (2019). CEO ability and corporate social responsibility. *Journal of Business Ethics*, *157*, 391-411.

Zhang, Y. (2008). Information asymmetry and the dismissal of newly appointed CEOs: An empirical investigation. *Strategic Management Journal*, *29*(8), 859-872.

Zhao, X., & Murrell, A. (2022). Does a virtuous circle really exist? Revisiting the causal linkage between CSP and CFP. *Journal of Business Ethics*, 1-20.

Zhu, C., Liu, X., Chen, D., & Yue, Y. (2024). Executive compensation and corporate sustainability: Evidence from ESG ratings. *Heliyon*, *10*(12).

TABLES AND FIGURES

Table 1. CEO's countries of origin distribution

Countries of Origin	Freq.	Percent	Cum.
Argentina	19	0.32	0.32
Australia	60	1.01	1.34
Belgium	4	0.07	1.40
Brazil	26	0.44	1.84
Canada	98	1.66	3.50
Croatia	10	0.17	3.67
Cuba	14	0.24	3.91
Egypt	16	0.27	4.18
France	30	0.51	4.68
France	11	0.19	4.87
Germany	50	0.85	5.72
Greece	11	0.19	5.90
India	110	1.86	7.76
Indonesia	6	0.10	7.86
Iran	23	0.39	8.25
Ireland	21	0.36	8.61
Israel	25	0.42	9.03
Italy	36	0.61	9.64
Lebanon	9	0.15	9.79
Malaysia	13	0.22	10.01
Mexico	7	0.12	10.13
Morocco	5	0.08	10.21
New Zealand	11	0.19	10.40
Norway	3	0.05	10.45
Poland	18	0.30	10.75
Portugal	2	0.03	10.79
Puerto Rico	6	0.10	10.89
South Africa	51	0.86	11.75
South Korea	4	0.07	11.82
Spain	13	0.22	12.04
Sweden	20	0.34	12.38
Switzerland	1	0.02	12.39
Taiwan	44	0.74	13.14
The Netherlands	10	0.17	13.31
Turkey	8	0.14	13.44
UK	104	1.76	15.20
USA	5004	84.61	99.81
Ukraine	1	0.02	99.83
Venezuela	10	0.17	100.00
Total	5914	100.00	

Table 2. Summary statistics

Panel A: Descriptive statistics

Variable	Obs	Mean	Std. Dev.
Environmental performance t+1	5252	0.593	0.341
Social performance t+1	5252	0.65	0.263
Resource use t+1	5252	0.496	0.353
Emissions t+1	5252	0.477	0.339
Innovation t+1	5252	0.299	0.327
Workforce t+1	5252	0.547	0.294
Human rights t+1	5252	0.338	0.349
Community t+1	5252	0.703	0.278
Production responsibility t+1	5252	0.477	0.307
CEO_UAI	5180	0.475	0.08
CEO bonus ratio	4923	0.021	0.079
New CEO	5194	0.285	0.452
Firm size	5204	9.988	1.454
R&D intensity	5204	0.016	0.04
Advertising intensity	5204	0.012	0.034
Leverage	5193	-3.688	241.081
Cash ratio	5204	0.116	0.121
ROA	5203	0.052	0.084
Employee	5154	3.266	1.282
Tobin’s Q	5125	0.525	0.486
Female CEO	5194	0.053	0.224
CEO age	5191	57.325	6.614
CEO tenure	5194	7.324	6.835
CEO-chairman duality	5194	0.511	0.5
MBA degree	5193	0.383	0.486
Number of titles	5194	2.029	0.589
Founder CEO	5194	0.067	0.249
Firm age	5172	3.992	.854
Board size	5136	11.013	2.092
Foreign director%	5133	0.857	0.182
Male director%	5136	0.79	0.103

Panel B: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Environmental performance t+1	1.000													
(2) Social performance t+1	0.636*	1.000												
(3) Resource use t+1	0.833*	0.648*	1.000											
(4) Emissions t+1	0.811*	0.609*	0.845*	1.000										
(5) Innovation t+1	0.643*	0.393*	0.484*	0.464*	1.000									
(6) Workforce t+1	0.712*	0.574*	0.773*	0.768*	0.378*	1.000								
(7) Human rights t+1	0.601*	0.556*	0.675*	0.581*	0.409*	0.566*	1.000							
(8) Community t+1	0.673*	0.376*	0.653*	0.653*	0.383*	0.755*	0.455*	1.000						
(9) Production responsibility t+1	0.626*	0.488*	0.616*	0.586*	0.423*	0.608*	0.486*	0.565*	1.000					
(10) CEO_UAI	-0.018	0.015	-0.015	-0.003	-0.016	-0.040*	0.032*	-0.050*	-0.043*	1.000				
(11) CEO bonus ratio	-0.036*	-0.068*	-0.038*	-0.029*	0.033*	-0.011	-0.018	-0.017	-0.010	0.036*	1.000			
(12) New CEO	0.020	0.017	0.017	0.020	0.019	-0.011	0.015	-0.011	0.002	0.027	0.001	1.000		
(13) Firm size	0.206*	0.203*	0.252*	0.279*	0.179*	0.211*	0.098*	0.143*	0.140*	-0.039*	0.156*	0.030*	1.000	
(14) R&D intensity	0.104*	0.108*	0.099*	0.087*	0.065*	0.151*	0.123*	0.072*	0.103*	0.084*	0.012	-0.012	-0.102*	1.000

Panel B continued

Variables	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
(15) Advertising intensity	1.000													
(16) Leverage	0.005	1.000												
(17) Cash ratio	0.169*	0.012	1.000											
(18) ROA	0.051*	0.013	0.128*	1.000										
(19) Employee	0.052*	0.027	-0.043*	0.145*	1.000									
(20) Tobin's Q	0.339*	0.017	0.375*	0.425*	0.077*	1.000								
(21) Female CEO	0.066*	0.005	-0.007	0.032*	0.057*	0.020	1.000							
(22) CEO age	-0.145*	-0.015	-0.153*	0.021	0.110*	-0.129*	-0.052*	1.000						
(23) CEO tenure	-0.001	0.014	0.067*	0.022	-0.008	0.031*	-0.106*	0.455*	1.000					
(24) CEO-chairman duality	-0.028*	0.022	-0.073*	-0.035*	0.145*	-0.039*	-0.036*	0.218*	0.266*	1.000				
(25) MBA degree	-0.097*	-0.026	-0.006	-0.008	-0.011	-0.089*	-0.026	-0.001	-0.021	0.010	1.000			
(26) Number of titles	-0.032*	0.036*	-0.110*	-0.047*	-0.017	-0.047*	-0.023	0.097*	0.084*	0.583*	-0.036*	1.000		
(27) Founder CEO	0.060*	0.005	0.165*	-0.053*	-0.099*	0.138*	-0.063*	0.069*	0.380*	0.129*	-0.047*	0.027*	1.000	
(28) Firm age	-0.043*	0.007	-0.130*	0.029*	0.191*	-0.088*	-0.007	0.132*	-0.047*	0.163*	0.073*	0.159*	-0.277*	1.000
(29) Board size	0.017	-0.003	-0.090*	-0.027	0.274*	-0.108*	0.032*	0.110*	-0.059*	0.089*	0.070*	0.037*	-0.097*	0.185*
(30) foreign director%	-0.061*	-0.018	-0.097*	-0.020	-0.055*	-0.075*	-0.026	0.036*	0.045*	0.025	0.011	0.047*	-0.025	0.047*
(31) Male director%	-0.139*	-0.007	0.060*	-0.051*	-0.226*	-0.081*	-0.266*	-0.021	0.119*	-0.050*	-0.024	-0.025	0.133*	-0.181*

Variables	(29)	(30)	(31)
(29) Board size	1.000		
(30) Foreign director%	-0.075*	1.000	
(31) Male director	-0.151*	0.051*	1.000

Table 3. CEO cultural background and environmental performance

	(1) Environment t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.203***	-0.197***	-0.114	-0.087
	(0.068)	(0.069)	(0.073)	(0.075)
Firm size	0.045***	0.053***	0.068***	0.017
	(0.011)	(0.013)	(0.013)	(0.012)
R&D intensity	0.102	0.280	0.190	0.263
	(0.300)	(0.330)	(0.303)	(0.229)
Advertising intensity	0.145	0.003	0.105	-0.077
	(0.317)	(0.405)	(0.364)	(0.326)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.175***	0.218***	0.211***	0.062
	(0.062)	(0.066)	(0.071)	(0.069)
ROA	0.021	-0.019	0.024	0.094*
	(0.057)	(0.052)	(0.062)	(0.053)
Employee	0.058***	0.066***	0.057***	0.055***
	(0.011)	(0.014)	(0.013)	(0.013)
Tobin's Q	-0.033*	0.008	-0.000	-0.030
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.030	0.036	0.030	0.054*
	(0.028)	(0.031)	(0.031)	(0.031)
CEO age	0.001	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.000	-0.000	0.000	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.014	-0.007	-0.025	0.058
	(0.081)	(0.075)	(0.075)	(0.076)
CEO-chairman duality	-0.020	0.004	-0.012	-0.023
	(0.017)	(0.019)	(0.019)	(0.020)
MBA degree	0.002	0.001	0.011	-0.009
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.002	-0.018	-0.005	-0.001
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.032	-0.006	-0.021	-0.011
	(0.047)	(0.049)	(0.044)	(0.034)
Firm age	0.033***	0.028**	0.020*	0.043***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.011***	0.002	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.127***	-0.056	-0.071*	-0.083*
	(0.040)	(0.040)	(0.039)	(0.045)
Male director%	-0.261***	-0.269***	-0.243***	-0.220***
	(0.067)	(0.072)	(0.070)	(0.073)
Constant	0.202	0.247	0.019	-0.083
	(0.164)	(0.188)	(0.186)	(0.185)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
R-squared	0.541	0.485	0.457	0.317
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1

Table 4. CEO cultural background and social performance

	(1) Social t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.033	-0.141**	-0.113	-0.066	-0.050
	(0.057)	(0.068)	(0.095)	(0.060)	(0.069)
Firm size	0.017	0.043***	0.029**	0.022**	0.034***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.256	0.562***	-0.012	0.467***	0.259
	(0.278)	(0.209)	(0.273)	(0.131)	(0.347)
Advertising intensity	0.713**	-0.139	0.743**	-0.296	0.043
	(0.281)	(0.357)	(0.321)	(0.347)	(0.429)
Leverage	0.000***	0.000***	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.108**	0.182***	0.131*	0.117**	0.168**
	(0.051)	(0.061)	(0.071)	(0.048)	(0.071)
ROA	0.036	-0.015	0.023	0.003	0.067
	(0.066)	(0.052)	(0.063)	(0.027)	(0.054)
Employee	0.052***	0.028***	0.044***	0.027***	0.040***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.026	0.030	-0.016	0.012	-0.003
	(0.017)	(0.019)	(0.023)	(0.013)	(0.019)
Female CEO	-0.015	0.033	0.028	0.024	0.026
	(0.021)	(0.027)	(0.029)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	0.000	0.001	0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO bonus ratio	0.017	0.020	0.058	-0.026	0.043
	(0.069)	(0.057)	(0.085)	(0.048)	(0.066)
CEO-chairman duality	-0.015	0.015	-0.000	0.008	0.001
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)
MBA degree	0.025**	0.014	0.030*	0.009	0.011
	(0.011)	(0.012)	(0.018)	(0.010)	(0.014)
Number of titles	-0.001	-0.012	-0.012	-0.002	-0.005
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.030	0.005	0.001	-0.016	-0.060
	(0.048)	(0.031)	(0.059)	(0.031)	(0.045)
Firm age	0.034***	0.023**	0.018	0.026***	0.030**
	(0.010)	(0.011)	(0.013)	(0.009)	(0.014)
Board size	0.007***	0.004	0.005	0.006***	0.007***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.043	-0.023	-0.077*	-0.014	-0.071
	(0.037)	(0.032)	(0.041)	(0.028)	(0.046)
Male director%	-0.303***	-0.267***	-0.182**	-0.202***	-0.205***
	(0.057)	(0.062)	(0.076)	(0.048)	(0.076)
Constant	0.459***	0.534***	0.207	0.745***	0.070
	(0.156)	(0.158)	(0.198)	(0.121)	(0.210)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.407	0.491	0.426	0.597	0.360
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1

Table 5. The moderating role of CEO annual bonus in CEO_UAI and Environmental Performance

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.183***	-0.182***	-0.094	-0.085
	(0.065)	(0.066)	(0.070)	(0.076)
CEO bonus ratio	0.647**	0.464*	0.609**	0.126
	(0.252)	(0.282)	(0.242)	(0.359)
CEO_UAI*CEO bonus ratio	-1.309***	-0.975*	-1.312***	-0.141
	(0.432)	(0.511)	(0.423)	(0.719)
Firm size	0.045***	0.053***	0.068***	0.017
	(0.011)	(0.013)	(0.013)	(0.012)
R&D intensity	0.118	0.292	0.205	0.265
	(0.305)	(0.335)	(0.309)	(0.227)
Advertising intensity	0.156	0.011	0.116	-0.076
	(0.318)	(0.406)	(0.365)	(0.326)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.180***	0.221***	0.215***	0.062
	(0.062)	(0.067)	(0.071)	(0.069)
ROA	0.014	-0.023	0.018	0.093*
	(0.057)	(0.052)	(0.063)	(0.052)
Employee	0.058***	0.066***	0.057***	0.055***
	(0.011)	(0.013)	(0.013)	(0.013)
Tobin's Q	-0.034*	0.008	-0.000	-0.030
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.031	0.037	0.031	0.054*
	(0.028)	(0.031)	(0.031)	(0.031)
CEO age	0.001	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	-0.000	0.000	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
CEO-chairman duality	-0.020	0.004	-0.012	-0.023
	(0.017)	(0.019)	(0.019)	(0.020)
MBA degree	0.002	0.000	0.011	-0.009
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.002	-0.019	-0.006	-0.001
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.035	-0.008	-0.023	-0.011
	(0.047)	(0.049)	(0.044)	(0.034)
Firm age	0.032***	0.028**	0.020	0.042***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.010***	0.002	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.127***	-0.056	-0.071*	-0.083*
	(0.040)	(0.040)	(0.039)	(0.045)
Male director%	-0.259***	-0.267***	-0.241***	-0.220***
	(0.067)	(0.072)	(0.070)	(0.073)

Constant	0.194	0.241	0.012	-0.084
	(0.163)	(0.188)	(0.186)	(0.186)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
R-squared	0.541	0.485	0.457	0.316
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1

Table 6. The moderating role of CEO annual bonus in CEO_UAI and Social Performance

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.020	-0.134**	-0.089	-0.053	-0.046
	(0.055)	(0.066)	(0.097)	(0.054)	(0.070)
CEO bonus ratio	0.413*	0.262	0.795***	0.356	0.192
	(0.218)	(0.258)	(0.305)	(0.332)	(0.314)
CEO_UAI*CEO bonus ratio	-0.819**	-0.500	-1.525***	-0.790	-0.308
	(0.388)	(0.503)	(0.585)	(0.653)	(0.636)
Firm size	0.016	0.043***	0.029**	0.022**	0.034***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.265	0.568***	0.007	0.477***	0.263
	(0.281)	(0.212)	(0.269)	(0.129)	(0.347)
Advertising intensity	0.720**	-0.135	0.757**	-0.290	0.046
	(0.282)	(0.358)	(0.320)	(0.350)	(0.429)
Leverage	0.000***	0.000***	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.111**	0.183***	0.136*	0.120**	0.169**
	(0.051)	(0.061)	(0.071)	(0.048)	(0.070)
ROA	0.032	-0.017	0.016	-0.000	0.065
	(0.066)	(0.053)	(0.062)	(0.027)	(0.054)
Employee	0.052***	0.028***	0.044***	0.027***	0.040***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.026	0.030	-0.016	0.012	-0.004
	(0.017)	(0.019)	(0.022)	(0.013)	(0.019)
Female CEO	-0.015	0.033	0.029	0.024	0.027
	(0.021)	(0.027)	(0.029)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	0.000	0.001	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO-chairman duality	-0.015	0.015	0.000	0.008	0.001
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)
MBA degree	0.025**	0.014	0.030*	0.009	0.011
	(0.011)	(0.012)	(0.018)	(0.010)	(0.014)
Number of titles	-0.001	-0.013	-0.013	-0.002	-0.005
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.032	0.004	-0.001	-0.018	-0.061
	(0.048)	(0.031)	(0.059)	(0.031)	(0.045)
Firm age	0.033***	0.022**	0.017	0.025***	0.030**

	(0.010)	(0.011)	(0.013)	(0.009)	(0.014)
Board size	0.007***	0.004	0.005	0.006***	0.007***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.043	-0.023	-0.077*	-0.014	-0.071
	(0.037)	(0.031)	(0.041)	(0.028)	(0.046)
Male director%	-0.302***	-0.266***	-0.179**	-0.201***	-0.204***
	(0.057)	(0.062)	(0.076)	(0.048)	(0.076)
Constant	0.455***	0.531***	0.198	0.740***	0.069
	(0.156)	(0.158)	(0.198)	(0.121)	(0.210)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.408	0.492	0.426	0.597	0.360
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1

Table 7. The moderating role of new CEO in CEO_UAI and Environmental Performance

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.262***	-0.273***	-0.240**	-0.128
	(0.090)	(0.087)	(0.095)	(0.127)
New CEO	-0.073	-0.096**	-0.146***	-0.051
	(0.045)	(0.046)	(0.050)	(0.070)
CEO_UAI*New CEO	0.125	0.161*	0.261**	0.086
	(0.092)	(0.095)	(0.105)	(0.148)
Firm size	0.045***	0.052***	0.067***	0.017
	(0.011)	(0.013)	(0.013)	(0.012)
R&D intensity	0.092	0.267	0.169	0.256
	(0.301)	(0.331)	(0.303)	(0.229)
Advertising intensity	0.141	-0.002	0.094	-0.080
	(0.318)	(0.411)	(0.368)	(0.327)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.182***	0.226***	0.223***	0.066
	(0.062)	(0.067)	(0.071)	(0.069)
ROA	0.022	-0.017	0.028	0.095*
	(0.056)	(0.050)	(0.059)	(0.053)
Employee	0.058***	0.067***	0.058***	0.055***
	(0.011)	(0.014)	(0.013)	(0.013)
Tobin's Q	-0.035*	0.007	-0.002	-0.031*
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.030	0.036	0.030	0.054*
	(0.028)	(0.031)	(0.031)	(0.031)
CEO age	0.001	-0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.017	-0.003	-0.020	0.060
	(0.081)	(0.074)	(0.075)	(0.076)
CEO-chairman duality	-0.023	0.001	-0.015	-0.025

	(0.017)	(0.019)	(0.019)	(0.020)
MBA degree	0.002	0.001	0.012	-0.009
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.002	-0.018	-0.006	-0.001
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.025	0.005	-0.007	-0.005
	(0.046)	(0.048)	(0.042)	(0.034)
Firm age	0.033***	0.028**	0.020*	0.043***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.011***	0.003	0.007**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.127***	-0.056	-0.071*	-0.083*
	(0.040)	(0.040)	(0.039)	(0.045)
Male director%	-0.262***	-0.270***	-0.246***	-0.221***
	(0.067)	(0.071)	(0.069)	(0.073)
Constant	0.244	0.304	0.104	-0.052
	(0.167)	(0.190)	(0.186)	(0.193)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
R-squared	0.542	0.486	0.459	0.317
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1

Table 8. The moderating role of new CEO in CEO_UAI and Social Performance

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.045	-0.143	-0.129	-0.123*	-0.029
	(0.083)	(0.093)	(0.105)	(0.072)	(0.089)
New CEO	-0.045	-0.037	-0.053	-0.077**	-0.015
	(0.044)	(0.047)	(0.056)	(0.035)	(0.047)
CEO_UAI*New CEO	0.038	0.017	0.047	0.125*	-0.027
	(0.090)	(0.097)	(0.115)	(0.069)	(0.095)
Firm size	0.016	0.043***	0.029**	0.022**	0.033***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.248	0.555***	-0.019	0.458***	0.253
	(0.280)	(0.211)	(0.274)	(0.130)	(0.349)
Advertising intensity	0.714**	-0.136	0.746**	-0.300	0.051
	(0.284)	(0.359)	(0.323)	(0.352)	(0.432)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cas hratio	0.113**	0.186***	0.137*	0.124***	0.171**
	(0.051)	(0.061)	(0.072)	(0.048)	(0.071)
ROA	0.035	-0.016	0.023	0.005	0.065
	(0.066)	(0.053)	(0.063)	(0.027)	(0.054)
Employee	0.054***	0.030***	0.046***	0.027***	0.042***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.028*	0.028	-0.018	0.010	-0.005
	(0.017)	(0.019)	(0.022)	(0.013)	(0.019)

Female CEO	-0.016	0.032	0.028	0.024	0.026
	(0.021)	(0.027)	(0.029)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.000	-0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.020	0.023	0.061	-0.023	0.045
	(0.069)	(0.057)	(0.084)	(0.048)	(0.065)
CEO-chairman duality	-0.019	0.010	-0.005	0.005	-0.003
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)
MBA degree	0.026**	0.016	0.032*	0.010	0.012
	(0.011)	(0.012)	(0.018)	(0.010)	(0.014)
Number of titles	-0.001	-0.012	-0.012	-0.002	-0.005
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.017	0.018	0.016	-0.006	-0.047
	(0.048)	(0.031)	(0.059)	(0.030)	(0.043)
Firm age	0.034***	0.023**	0.018	0.026***	0.030**
	(0.009)	(0.011)	(0.013)	(0.009)	(0.014)
Board size	0.007***	0.004	0.005*	0.006***	0.007***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.042	-0.023	-0.076*	-0.013	-0.071
	(0.037)	(0.031)	(0.041)	(0.028)	(0.046)
Male director%	-0.302***	-0.265***	-0.180**	-0.203***	-0.202***
	(0.057)	(0.062)	(0.076)	(0.048)	(0.075)
Constant	0.491***	0.560***	0.242	0.790***	0.085
	(0.159)	(0.160)	(0.199)	(0.121)	(0.213)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.410	0.494	0.428	0.598	0.362
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Table 9. CEO cultural background and environmental performance

-Including firm FE

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.192**	-0.201**	-0.090	-0.087
	(0.076)	(0.080)	(0.080)	(0.083)
Firm size	0.050**	0.049*	0.078***	0.000
	(0.023)	(0.026)	(0.026)	(0.022)
R&D intensity	-0.149	0.173	-0.011	0.321
	(0.341)	(0.343)	(0.415)	(0.302)
Advertising intensity	0.020	-0.166	-0.206	-0.337
	(0.457)	(0.573)	(0.486)	(0.445)
Leverage	0.000***	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.189**	0.182**	0.147*	0.061
	(0.076)	(0.081)	(0.081)	(0.082)

ROA	0.010	-0.020	0.016	0.105*
	(0.054)	(0.049)	(0.060)	(0.055)
Employee	0.068***	0.060**	0.057**	0.057**
	(0.024)	(0.025)	(0.024)	(0.025)
Tobin's Q	-0.038	-0.005	-0.008	-0.028
	(0.024)	(0.026)	(0.026)	(0.023)
Female CEO	0.041	0.053	0.037	0.064*
	(0.031)	(0.033)	(0.034)	(0.033)
CEO age	0.002	0.001	0.001	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
CEO tenure	0.000	-0.000	0.001	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
CEO bonus ratio	0.051	0.012	0.004	0.034
	(0.085)	(0.077)	(0.080)	(0.079)
CEO-chairman duality	-0.036*	-0.008	-0.019	-0.041*
	(0.021)	(0.023)	(0.022)	(0.023)
MBA degree	-0.003	-0.005	0.012	-0.016
	(0.014)	(0.016)	(0.016)	(0.016)
Number of titles	0.001	-0.017	-0.007	0.002
	(0.015)	(0.018)	(0.018)	(0.017)
Founder CEO	-0.069	-0.015	-0.039	-0.027
	(0.066)	(0.065)	(0.056)	(0.044)
Firm age	0.055	0.039	0.015	0.069*
	(0.040)	(0.044)	(0.036)	(0.041)
Board size	0.008***	-0.001	0.003	0.006*
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.099**	-0.033	-0.062	-0.034
	(0.050)	(0.048)	(0.047)	(0.052)
Male director%	-0.241***	-0.222***	-0.198***	-0.233***
	(0.072)	(0.077)	(0.074)	(0.076)
Constant	-0.105	-0.054	-0.314	0.082
	(0.254)	(0.285)	(0.264)	(0.266)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839
R-squared	0.518	0.399	0.400	0.184

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Table 10. CEO cultural background and social performance

-Including firm FE

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.015	-0.140*	-0.131	-0.035	-0.007
	(0.062)	(0.074)	(0.108)	(0.062)	(0.077)
Firm size	0.026	0.056***	0.036	0.040**	0.039
	(0.022)	(0.021)	(0.027)	(0.018)	(0.025)
R&D intensity	0.122	0.418	-0.175	0.531***	0.082
	(0.379)	(0.276)	(0.366)	(0.179)	(0.503)
Advertising	1.035***	-0.534	0.942**	-0.655	-0.011

	(0.370)	(0.576)	(0.471)	(0.615)	(0.545)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.106*	0.134*	0.005	0.128**	0.201**
	(0.059)	(0.072)	(0.088)	(0.061)	(0.081)
ROA	0.023	-0.014	0.018	0.003	0.054
	(0.062)	(0.052)	(0.062)	(0.028)	(0.054)
Employee	0.044*	-0.006	0.012	0.003	0.039
	(0.023)	(0.022)	(0.027)	(0.017)	(0.025)
Tobin's Q	-0.027	0.021	-0.031	0.020	-0.005
	(0.021)	(0.023)	(0.029)	(0.016)	(0.023)
Female CEO	-0.016	0.041	0.024	0.035	0.034
	(0.024)	(0.030)	(0.033)	(0.023)	(0.040)
CEO age	0.000	-0.000	-0.001	-0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
CEO tenure	0.001	0.000	0.002	0.001	-0.000
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
CEO bonus ratio	0.053	0.031	0.048	-0.007	0.061
	(0.071)	(0.061)	(0.086)	(0.052)	(0.069)
CEO-chairman duality	-0.027	0.008	-0.020	-0.001	-0.002
	(0.018)	(0.019)	(0.023)	(0.017)	(0.021)
MBA degree	0.024*	0.016	0.026	0.011	0.013
	(0.013)	(0.014)	(0.020)	(0.011)	(0.016)
Number of titles	-0.003	-0.012	-0.004	-0.003	-0.008
	(0.014)	(0.015)	(0.018)	(0.012)	(0.017)
Founder CEO	-0.006	0.008	0.038	-0.013	-0.071
	(0.067)	(0.042)	(0.086)	(0.042)	(0.060)
Firm age	0.060	0.071**	0.008	0.034	0.070*
	(0.037)	(0.032)	(0.053)	(0.026)	(0.041)
Board size	0.005*	0.001	0.004	0.005**	0.007**
	(0.003)	(0.003)	(0.004)	(0.002)	(0.003)
Foreign director%	-0.023	-0.012	-0.030	-0.011	-0.084
	(0.046)	(0.038)	(0.053)	(0.035)	(0.054)
Male director%	-0.257***	-0.210***	-0.167**	-0.164***	-0.201**
	(0.061)	(0.067)	(0.083)	(0.055)	(0.080)
Constant	0.100	0.033	0.024	0.368*	-0.198
	(0.249)	(0.231)	(0.337)	(0.189)	(0.280)
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839
R-squared	0.179	0.476	0.305	0.648	0.366

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Table 11. The moderating role of CEO bonus ratio in CEO_UAI and Social Performance-Including firm FE

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.174**	-0.186**	-0.071	-0.085
	(0.073)	(0.076)	(0.077)	(0.083)
CEO bonus ratio	0.768***	0.601**	0.725***	0.126
	(0.269)	(0.287)	(0.242)	(0.416)
CEO_UAI*CEO bonus ratio	-1.487***	-1.222**	-1.497***	-0.192
	(0.472)	(0.520)	(0.426)	(0.844)
Firm size	0.049**	0.048*	0.077***	0.000
	(0.023)	(0.026)	(0.025)	(0.022)
R&D intensity	-0.141	0.180	-0.003	0.322
	(0.344)	(0.347)	(0.420)	(0.299)
Advertising intensity	0.041	-0.148	-0.185	-0.335
	(0.457)	(0.571)	(0.486)	(0.445)
Leverage	0.000***	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.194**	0.186**	0.151*	0.061
	(0.076)	(0.081)	(0.081)	(0.081)
ROA	0.004	-0.025	0.010	0.104*
	(0.054)	(0.050)	(0.061)	(0.054)
Employee	0.070***	0.061**	0.059**	0.058**
	(0.023)	(0.025)	(0.024)	(0.024)
Tobin's Q	-0.038	-0.005	-0.008	-0.028
	(0.024)	(0.026)	(0.025)	(0.023)
Female CEO	0.042	0.054	0.038	0.064*
	(0.031)	(0.033)	(0.034)	(0.033)
CEO age	0.002	0.001	0.001	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
CEO tenure	0.000	0.000	0.001	0.000
	(0.002)	(0.002)	(0.001)	(0.002)
CEO-chairman duality	-0.036*	-0.007	-0.019	-0.041*
	(0.021)	(0.023)	(0.022)	(0.023)
MBA degree	-0.004	-0.005	0.011	-0.017
	(0.014)	(0.016)	(0.016)	(0.016)
Number of titles	0.001	-0.017	-0.008	0.002
	(0.015)	(0.018)	(0.018)	(0.017)
Founder CEO	-0.071	-0.016	-0.041	-0.027
	(0.066)	(0.065)	(0.056)	(0.044)
Firm age	0.054	0.038	0.014	0.068*
	(0.040)	(0.044)	(0.036)	(0.041)
Board size	0.008***	-0.001	0.003	0.006*
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.098*	-0.032	-0.061	-0.034
	(0.050)	(0.048)	(0.047)	(0.052)
Male director%	-0.239***	-0.219***	-0.195***	-0.232***
	(0.072)	(0.077)	(0.074)	(0.076)
Constant	-0.104	-0.053	-0.313	0.082
	(0.253)	(0.285)	(0.263)	(0.266)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

Observations	4,839	4,839	4,839	4,839
R-squared	0.518	0.400	0.401	0.184

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Table 12. The moderating role of CEO bonus ratio in CEO_UAI and Social Performance-Including firm FE

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.007	-0.134*	-0.110	-0.026	-0.005
	(0.061)	(0.073)	(0.107)	(0.058)	(0.079)
CEO bonus ratio	0.384*	0.275	0.859***	0.326	0.157
	(0.232)	(0.229)	(0.305)	(0.325)	(0.349)
CEO_UAI*CEO bonus ratio	-0.687	-0.506	-1.681***	-0.690	-0.200
	(0.435)	(0.425)	(0.575)	(0.626)	(0.723)
Firm size	0.025	0.056***	0.035	0.039**	0.039
	(0.021)	(0.021)	(0.027)	(0.018)	(0.025)
R&D intensity	0.126	0.420	-0.165	0.535***	0.084
	(0.382)	(0.277)	(0.362)	(0.178)	(0.503)
Advertising intensity	1.044***	-0.527	0.966**	-0.646	-0.008
	(0.370)	(0.576)	(0.471)	(0.616)	(0.545)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.108*	0.136*	0.010	0.130**	0.202**
	(0.059)	(0.072)	(0.087)	(0.061)	(0.081)
ROA	0.020	-0.017	0.011	0.000	0.053
	(0.063)	(0.052)	(0.062)	(0.028)	(0.054)
Employee	0.045*	-0.005	0.013	0.004	0.039
	(0.023)	(0.022)	(0.027)	(0.017)	(0.025)
Tobin's Q	-0.027	0.021	-0.031	0.020	-0.005
	(0.021)	(0.023)	(0.029)	(0.016)	(0.023)
Female CEO	-0.015	0.042	0.026	0.036	0.035
	(0.024)	(0.030)	(0.033)	(0.023)	(0.040)
CEO age	0.000	-0.000	-0.001	-0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
CEO tenure	0.001	0.000	0.002	0.001	-0.000
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
CEO-chairman duality	-0.027	0.008	-0.020	-0.001	-0.002
	(0.018)	(0.019)	(0.023)	(0.017)	(0.021)
MBA degree	0.024*	0.016	0.025	0.011	0.013
	(0.013)	(0.014)	(0.020)	(0.011)	(0.016)
Number of titles	-0.003	-0.012	-0.004	-0.003	-0.008
	(0.014)	(0.015)	(0.018)	(0.012)	(0.017)
Founder CEO	-0.006	0.008	0.036	-0.014	-0.071
	(0.067)	(0.043)	(0.086)	(0.042)	(0.060)
Firm age	0.059	0.071**	0.006	0.033	0.069*
	(0.037)	(0.032)	(0.053)	(0.026)	(0.041)
Board size	0.005*	0.001	0.004	0.005**	0.007**
	(0.003)	(0.003)	(0.004)	(0.002)	(0.003)

Foreign director%	-0.023	-0.012	-0.029	-0.010	-0.084
	(0.045)	(0.038)	(0.053)	(0.035)	(0.054)
Male director%	-0.256***	-0.209***	-0.164**	-0.162***	-0.200**
	(0.061)	(0.067)	(0.083)	(0.055)	(0.080)
Constant	0.100	0.034	0.025	0.368*	-0.198
	(0.249)	(0.230)	(0.337)	(0.189)	(0.280)
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839
R-squared	0.180	0.476	0.306	0.648	0.366

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Table 13. The moderating role of new CEO in CEO_UAI and Environmental Performance-Including firm FE

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.262**	-0.281***	-0.223**	-0.137
	(0.103)	(0.103)	(0.105)	(0.139)
New CEO	-0.079*	-0.094**	-0.146***	-0.056
	(0.047)	(0.048)	(0.051)	(0.071)
CEO_UAI*New CEO	0.139	0.161	0.263**	0.099
	(0.096)	(0.099)	(0.107)	(0.152)
Firm size	0.049**	0.048*	0.076***	-0.000
	(0.023)	(0.026)	(0.025)	(0.022)
R&D intensity	-0.168	0.149	-0.045	0.307
	(0.342)	(0.345)	(0.415)	(0.303)
Advertising intensity	0.012	-0.173	-0.223	-0.343
	(0.463)	(0.585)	(0.502)	(0.445)
Leverage	0.000***	0.000*	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.197**	0.192**	0.161**	0.066
	(0.077)	(0.081)	(0.080)	(0.082)
ROA	0.012	-0.018	0.020	0.106*
	(0.052)	(0.047)	(0.056)	(0.055)
employee	0.070***	0.063**	0.060**	0.059**
	(0.024)	(0.026)	(0.024)	(0.024)
Tobin's Q	-0.039	-0.006	-0.010	-0.029
	(0.024)	(0.026)	(0.025)	(0.023)
Female CEO	0.040	0.052	0.036	0.064*
	(0.031)	(0.033)	(0.034)	(0.033)
CEO age	0.002	0.001	0.001	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)
CEO bonus ratio	0.053	0.015	0.007	0.035
	(0.085)	(0.076)	(0.080)	(0.079)
CEO-chairman duality	-0.038*	-0.010	-0.022	-0.042*
	(0.021)	(0.023)	(0.022)	(0.023)
MBA degree	-0.002	-0.004	0.013	-0.016
	(0.014)	(0.016)	(0.016)	(0.017)

Number of titles	0.001	-0.017	-0.008	0.002
	(0.015)	(0.018)	(0.018)	(0.017)
Founder CEO	-0.060	-0.003	-0.024	-0.021
	(0.065)	(0.065)	(0.054)	(0.043)
Firm age	0.056	0.040	0.016	0.069*
	(0.040)	(0.044)	(0.036)	(0.041)
Board size	0.008***	-0.001	0.003	0.006*
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.100**	-0.034	-0.063	-0.035
	(0.050)	(0.048)	(0.046)	(0.052)
Male director%	-0.243***	-0.223***	-0.201***	-0.234***
	(0.072)	(0.077)	(0.073)	(0.076)
Constant	-0.055	0.007	-0.223	0.117
	(0.255)	(0.287)	(0.264)	(0.273)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839
R-squared	0.518	0.400	0.402	0.185

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Table 14. The moderating role of new CEO in CEO_UAI and Social Performance-Including firm FE

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.021	-0.139	-0.148	-0.091	0.020
	(0.091)	(0.100)	(0.122)	(0.074)	(0.100)
New CEO	-0.038	-0.032	-0.053	-0.073**	-0.010
	(0.045)	(0.047)	(0.058)	(0.033)	(0.047)
CEO_UAI*New CEO	0.025	0.013	0.049	0.116*	-0.035
	(0.092)	(0.097)	(0.117)	(0.064)	(0.096)
Firm size	0.024	0.055**	0.034	0.039**	0.038
	(0.021)	(0.021)	(0.027)	(0.018)	(0.025)
R&D intensity	0.102	0.398	-0.200	0.510***	0.065
	(0.384)	(0.280)	(0.371)	(0.180)	(0.507)
Advertising intensity	1.049***	-0.518	0.957**	-0.657	0.012
	(0.371)	(0.578)	(0.470)	(0.626)	(0.544)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.112*	0.140*	0.012	0.136**	0.205**
	(0.059)	(0.072)	(0.088)	(0.061)	(0.081)
ROA	0.022	-0.016	0.017	0.005	0.051
	(0.062)	(0.053)	(0.062)	(0.028)	(0.054)
Employee	0.048**	-0.002	0.016	0.006	0.043*
	(0.023)	(0.022)	(0.027)	(0.017)	(0.025)
Tobin's Q	-0.029	0.019	-0.033	0.019	-0.007
	(0.021)	(0.022)	(0.029)	(0.016)	(0.023)
Female CEO	-0.017	0.040	0.023	0.034	0.034
	(0.024)	(0.030)	(0.033)	(0.023)	(0.040)

CEO age	-0.000	-0.001	-0.001	-0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
CEO tenure	-0.001	-0.001	-0.000	-0.000	-0.002
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
CEO bonus ratio	0.056	0.034	0.052	-0.004	0.063
	(0.071)	(0.060)	(0.086)	(0.051)	(0.068)
CEO-chairman duality	-0.031*	0.004	-0.025	-0.004	-0.006
	(0.018)	(0.019)	(0.023)	(0.017)	(0.021)
MBA	0.026**	0.018	0.028	0.012	0.015
	(0.012)	(0.013)	(0.020)	(0.011)	(0.016)
Number of titles	-0.003	-0.012	-0.004	-0.003	-0.008
	(0.013)	(0.015)	(0.018)	(0.012)	(0.017)
Founder CEO	0.009	0.024	0.056	-0.001	-0.056
	(0.066)	(0.042)	(0.086)	(0.042)	(0.058)
Firm age	0.059	0.069**	0.006	0.034	0.067
	(0.038)	(0.032)	(0.054)	(0.026)	(0.042)
Board size	0.005*	0.001	0.004	0.005**	0.007**
	(0.003)	(0.003)	(0.004)	(0.002)	(0.003)
Foreign director%	-0.024	-0.013	-0.031	-0.011	-0.084
	(0.045)	(0.038)	(0.053)	(0.035)	(0.054)
Male director%	-0.256***	-0.208***	-0.166**	-0.165***	-0.198**
	(0.060)	(0.067)	(0.083)	(0.055)	(0.079)
Constant	0.138	0.069	0.073	0.418**	-0.173
	(0.249)	(0.234)	(0.342)	(0.188)	(0.282)
Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839
R-squared	0.182	0.478	0.306	0.649	0.367

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

APPENDIX TABLES

Appendix Table A. The moderating role of CEO bonus ratio and new CEO in CEO_UAI and Environmental Performance

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.237***	-0.256***	-0.217**	-0.125
	(0.087)	(0.082)	(0.091)	(0.130)
CEO bonus ratio	0.630**	0.445*	0.577***	0.117
	(0.248)	(0.262)	(0.223)	(0.363)
CEO_UAI*CEO bonus ratio	-1.269***	-0.928**	-1.234***	-0.117
	(0.423)	(0.467)	(0.382)	(0.730)
New CEO	-0.069	-0.093**	-0.142***	-0.050
	(0.045)	(0.045)	(0.049)	(0.070)
CEO_UAI*New CEO	0.115	0.155*	0.253**	0.085
	(0.091)	(0.092)	(0.102)	(0.149)
Firm size	0.044***	0.052***	0.067***	0.017
	(0.011)	(0.013)	(0.013)	(0.012)
R&D intensity	0.108	0.279	0.184	0.258
	(0.305)	(0.335)	(0.308)	(0.227)
Advertising intensity	0.152	0.006	0.105	-0.079
	(0.318)	(0.411)	(0.369)	(0.327)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.186***	0.229***	0.227***	0.067
	(0.062)	(0.067)	(0.071)	(0.069)
ROA	0.016	-0.021	0.022	0.094*
	(0.056)	(0.051)	(0.060)	(0.052)
Employee	0.058***	0.067***	0.058***	0.055***
	(0.011)	(0.014)	(0.013)	(0.013)
Tobin's Q	-0.035*	0.006	-0.003	-0.031*
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.031	0.037	0.031	0.054*
	(0.028)	(0.031)	(0.031)	(0.031)
CEO age	0.001	-0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)
CEO-chairman duality	-0.022	0.001	-0.015	-0.025
	(0.017)	(0.019)	(0.019)	(0.020)
MBA degree	0.002	0.001	0.011	-0.009
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.002	-0.019	-0.006	-0.001
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.027	0.003	-0.010	-0.005
	(0.046)	(0.048)	(0.042)	(0.034)
Firm age	0.032***	0.028**	0.020	0.043***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.010***	0.002	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.127***	-0.056	-0.071*	-0.083*
	(0.040)	(0.040)	(0.039)	(0.045)

Male director%	-0.260***	-0.268***	-0.244***	-0.221***
	(0.067)	(0.072)	(0.069)	(0.073)
Constant	0.234	0.297	0.095	-0.053
	(0.166)	(0.190)	(0.186)	(0.194)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table B. The moderating role of CEO bonus ratio and new CEO in CEO_UAI and Social Performance

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.030	-0.133	-0.099	-0.109*	-0.023
	(0.080)	(0.092)	(0.105)	(0.063)	(0.092)
CEO bonus ratio	0.412*	0.264	0.794**	0.339	0.200
	(0.220)	(0.245)	(0.315)	(0.309)	(0.326)
CEO_UAI*CEO bonus ratio	-0.812**	-0.499	-1.515**	-0.748	-0.320
	(0.395)	(0.476)	(0.607)	(0.605)	(0.663)
New CEO	-0.042	-0.035	-0.048	-0.075**	-0.014
	(0.043)	(0.047)	(0.056)	(0.033)	(0.047)
CEO_UAI*New CEO	0.032	0.014	0.035	0.119*	-0.029
	(0.088)	(0.096)	(0.114)	(0.065)	(0.095)
Firm size	0.016	0.043***	0.029**	0.022**	0.033***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.259	0.561***	0.000	0.467***	0.257
	(0.282)	(0.213)	(0.271)	(0.128)	(0.349)
Advertising intensity	0.721**	-0.132	0.760**	-0.294	0.054
	(0.285)	(0.360)	(0.322)	(0.355)	(0.432)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.115**	0.187***	0.141**	0.126***	0.172**
	(0.051)	(0.061)	(0.071)	(0.048)	(0.071)
ROA	0.032	-0.018	0.016	0.001	0.064
	(0.066)	(0.053)	(0.063)	(0.027)	(0.054)
Employee	0.053***	0.030***	0.045***	0.027***	0.042***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.028*	0.028	-0.018	0.010	-0.005
	(0.017)	(0.019)	(0.022)	(0.013)	(0.019)
Female CEO	-0.015	0.033	0.029	0.024	0.026
	(0.021)	(0.027)	(0.029)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.000	-0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
CEO-chairman duality	-0.019	0.010	-0.005	0.005	-0.003
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)

MBA degree	0.026**	0.015	0.031*	0.009	0.012
	(0.011)	(0.012)	(0.018)	(0.010)	(0.014)
Number of titles	-0.001	-0.013	-0.013	-0.002	-0.005
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.019	0.018	0.013	-0.008	-0.047
	(0.048)	(0.031)	(0.060)	(0.030)	(0.044)
Firm age	0.034***	0.023**	0.018	0.025***	0.030**
	(0.010)	(0.011)	(0.013)	(0.009)	(0.014)
Board size	0.007***	0.004	0.005	0.006***	0.007***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.042	-0.022	-0.076*	-0.013	-0.071
	(0.036)	(0.031)	(0.041)	(0.028)	(0.046)
Male director%	-0.301***	-0.264***	-0.177**	-0.202***	-0.202***
	(0.057)	(0.062)	(0.076)	(0.048)	(0.075)
Constant	0.485***	0.556***	0.230	0.783***	0.083
	(0.158)	(0.160)	(0.199)	(0.120)	(0.213)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table C. CEO UAI and Environmental Performance-Including additional cultural values as controls

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.217**	-0.224**	-0.108	-0.146
	(0.093)	(0.100)	(0.098)	(0.111)
Firm size	0.046***	0.052***	0.068***	0.020
	(0.011)	(0.013)	(0.013)	(0.013)
R&D intensity	0.099	0.274	0.190	0.263
	(0.303)	(0.326)	(0.305)	(0.231)
Advertising intensity	0.181	0.039	0.102	-0.020
	(0.322)	(0.399)	(0.370)	(0.328)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.178***	0.214***	0.213***	0.068
	(0.062)	(0.066)	(0.071)	(0.069)
ROA	0.022	-0.017	0.023	0.096*
	(0.058)	(0.051)	(0.063)	(0.053)
Employee	0.058***	0.068***	0.057***	0.055***
	(0.011)	(0.013)	(0.013)	(0.013)
Tobin's Q	-0.032*	0.006	0.001	-0.027
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.031	0.031	0.031	0.059*
	(0.029)	(0.032)	(0.032)	(0.032)
CEO age	0.001	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.000	-0.000	0.000	-0.000

	(0.001)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.011	-0.004	-0.025	0.047
	(0.080)	(0.075)	(0.075)	(0.076)
CEO-chairman duality	-0.020	0.005	-0.012	-0.024
	(0.017)	(0.019)	(0.019)	(0.020)
MBA degree	0.004	-0.001	0.012	-0.006
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.003	-0.018	-0.005	0.000
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.030	-0.009	-0.019	-0.010
	(0.047)	(0.047)	(0.044)	(0.034)
Firm age	0.032***	0.028**	0.021*	0.041***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.010***	0.003	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.131***	-0.060	-0.069*	-0.091**
	(0.040)	(0.041)	(0.040)	(0.045)
Male director%	-0.250***	-0.267***	-0.239***	-0.207***
	(0.067)	(0.071)	(0.069)	(0.073)
CEO_individualism	0.142	-0.044	0.074	0.209
	(0.149)	(0.152)	(0.152)	(0.153)
CEO_powerdistance	0.216	0.219	0.022	0.278
	(0.172)	(0.177)	(0.182)	(0.199)
CEOindulgence	0.138	0.163*	-0.025	0.225*
	(0.089)	(0.086)	(0.098)	(0.135)
CEO_masculinity	0.117	0.035	0.094	-0.012
	(0.107)	(0.111)	(0.107)	(0.109)
CEO_longterm	-0.022	0.092	0.002	-0.231
	(0.138)	(0.153)	(0.149)	(0.165)
Constant	-0.136	0.023	-0.084	-0.361
	(0.223)	(0.252)	(0.248)	(0.269)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table D. CEO UAI and Social Performance-Including additional cultural values as controls

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.065	-0.188*	-0.270**	-0.056	-0.197*
	(0.082)	(0.098)	(0.117)	(0.065)	(0.102)
Firm size	0.017	0.044***	0.029**	0.023**	0.035***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.242	0.555***	0.012	0.463***	0.274
	(0.276)	(0.213)	(0.275)	(0.131)	(0.351)
Advertising intensity	0.750***	-0.097	0.749**	-0.281	0.089
	(0.267)	(0.352)	(0.327)	(0.349)	(0.420)

Leverage	0.000***	0.000***	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.105**	0.183***	0.127*	0.119**	0.167**
	(0.049)	(0.061)	(0.071)	(0.048)	(0.071)
ROA	0.036	-0.014	0.026	0.004	0.071
	(0.066)	(0.052)	(0.062)	(0.027)	(0.055)
Employee	0.053***	0.029***	0.045***	0.027***	0.041***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.027	0.031*	-0.016	0.013	-0.003
	(0.017)	(0.018)	(0.023)	(0.013)	(0.019)
Female CEO	-0.020	0.032	0.031	0.024	0.028
	(0.023)	(0.028)	(0.030)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	0.000	0.001	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO bonus ratio	0.023	0.020	0.064	-0.028	0.045
	(0.069)	(0.057)	(0.086)	(0.048)	(0.067)
CEO-chairman duality	-0.012	0.016	-0.001	0.008	0.001
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)
MBA degree	0.024**	0.015	0.029*	0.010	0.011
	(0.011)	(0.012)	(0.017)	(0.010)	(0.014)
Number of titles	-0.001	-0.012	-0.011	-0.002	-0.003
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.033	0.005	0.001	-0.015	-0.062
	(0.046)	(0.030)	(0.058)	(0.031)	(0.043)
Firm age	0.033***	0.022**	0.019	0.025***	0.030**
	(0.009)	(0.010)	(0.013)	(0.009)	(0.014)
Board size	0.008***	0.004	0.006*	0.006***	0.008***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.043	-0.025	-0.075*	-0.015	-0.079*
	(0.037)	(0.032)	(0.042)	(0.028)	(0.046)
Male director%	-0.293***	-0.254***	-0.178**	-0.197***	-0.194***
	(0.058)	(0.063)	(0.076)	(0.048)	(0.075)
CEO_individualism	0.100	0.182	0.219	0.057	0.208
	(0.122)	(0.135)	(0.173)	(0.118)	(0.168)
CEO_powerdistance	0.339**	0.330**	0.369**	0.060	0.485***
	(0.166)	(0.163)	(0.181)	(0.131)	(0.165)
CEO_indulgence	0.167**	0.164**	0.024	0.056	0.210**
	(0.069)	(0.084)	(0.117)	(0.055)	(0.098)
CEO_masculinity	0.145**	0.124	0.069	0.053	0.103
	(0.071)	(0.094)	(0.128)	(0.075)	(0.121)
CEO_longterm	0.148	0.001	-0.215	-0.003	-0.256
	(0.105)	(0.147)	(0.174)	(0.097)	(0.187)
Constant	-0.005	0.106	0.041	0.603***	-0.290
	(0.198)	(0.221)	(0.253)	(0.182)	(0.258)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table E. The moderating role of CEO bonus ratio in CEO_UAI and Environmental Performance -Including additional cultural values as controls

	(1) Environmental performance t+1	(2) Resource use t+1	(3) emissions t+1	(4) Innovation t+1
CEO_UAI	-0.206**	-0.215**	-0.097	-0.144
	(0.092)	(0.099)	(0.097)	(0.111)
CEO bonus ratio	0.660***	0.506*	0.606**	0.128
	(0.256)	(0.286)	(0.241)	(0.353)
CEO_UAI*CEO bonus ratio	-1.342***	-1.052**	-1.304***	-0.166
	(0.437)	(0.518)	(0.417)	(0.704)
Firm size	0.046***	0.052***	0.068***	0.020
	(0.011)	(0.013)	(0.013)	(0.013)
R&D intensity	0.115	0.287	0.206	0.265
	(0.308)	(0.331)	(0.310)	(0.228)
Advertising intensity	0.193	0.048	0.113	-0.018
	(0.323)	(0.400)	(0.371)	(0.328)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.182***	0.217***	0.217***	0.068
	(0.062)	(0.066)	(0.071)	(0.068)
ROA	0.015	-0.022	0.017	0.095*
	(0.058)	(0.051)	(0.064)	(0.052)
Employee	0.058***	0.068***	0.057***	0.055***
	(0.011)	(0.013)	(0.013)	(0.013)
Tobin's Q	-0.032*	0.006	0.001	-0.027
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.032	0.032	0.032	0.059*
	(0.029)	(0.032)	(0.032)	(0.032)
CEO age	0.001	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	-0.000	0.000	-0.000
	(0.001)	(0.002)	(0.001)	(0.001)
CEO-chairman duality	-0.019	0.005	-0.011	-0.024
	(0.017)	(0.019)	(0.019)	(0.020)
MBA degree	0.003	-0.001	0.011	-0.007
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.002	-0.018	-0.006	0.000
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEI	-0.033	-0.011	-0.021	-0.010
	(0.047)	(0.047)	(0.044)	(0.035)
Firm age	0.032***	0.027**	0.020*	0.041***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.010***	0.003	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.130***	-0.059	-0.068*	-0.091**
	(0.040)	(0.041)	(0.040)	(0.045)
Male director%	-0.247***	-0.265***	-0.237***	-0.207***
	(0.067)	(0.071)	(0.069)	(0.073)
CEO_individualism	0.157	-0.034	0.087	0.210
	(0.147)	(0.152)	(0.149)	(0.154)
CEO_powerdistance	0.242	0.238	0.046	0.281
	(0.170)	(0.174)	(0.178)	(0.200)

CEO_indulgence	0.138	0.163*	-0.026	0.225*
	(0.090)	(0.086)	(0.098)	(0.135)
CEO_masculinity	0.113	0.032	0.090	-0.013
	(0.108)	(0.111)	(0.106)	(0.109)
CEO_longterm	-0.019	0.095	0.004	-0.230
	(0.137)	(0.154)	(0.148)	(0.165)
Constant	-0.158	0.008	-0.103	-0.363
	(0.222)	(0.250)	(0.244)	(0.270)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table F. The moderating role of CEO bonus ratio in CEO_UAI and Social Performance -Including additional cultural values as controls

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.057	-0.183*	-0.255**	-0.050	-0.194*
	(0.081)	(0.097)	(0.118)	(0.064)	(0.102)
CEO bonus ratio	0.472**	0.301	0.884***	0.353	0.245
	(0.220)	(0.266)	(0.308)	(0.326)	(0.310)
CEO_UAI*CEO bonus ratio	-0.928**	-0.580	-1.693***	-0.788	-0.415
	(0.394)	(0.515)	(0.586)	(0.639)	(0.619)
Firm size	0.016	0.044***	0.029**	0.023**	0.035***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.253	0.562***	0.033	0.473***	0.278
	(0.279)	(0.215)	(0.271)	(0.129)	(0.352)
Advertising intensity	0.758***	-0.092	0.763**	-0.275	0.093
	(0.268)	(0.353)	(0.326)	(0.351)	(0.421)
Leverage	0.000***	0.000***	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.108**	0.184***	0.132*	0.122**	0.169**
	(0.049)	(0.061)	(0.070)	(0.048)	(0.070)
ROA	0.032	-0.016	0.018	-0.000	0.069
	(0.067)	(0.053)	(0.061)	(0.027)	(0.054)
Employee	0.053***	0.029***	0.044***	0.027***	0.041***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.027	0.031*	-0.016	0.013	-0.003
	(0.017)	(0.018)	(0.023)	(0.013)	(0.019)
Female CEO	-0.020	0.032	0.032	0.025	0.028
	(0.023)	(0.028)	(0.030)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	0.000	0.001	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

CEO-chairman duality	-0.012	0.017	0.000	0.009	0.001
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)
MBA degree	0.024**	0.015	0.028	0.010	0.010
	(0.011)	(0.012)	(0.017)	(0.010)	(0.014)
Number of titles	-0.001	-0.012	-0.012	-0.002	-0.003
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.034	0.004	-0.003	-0.017	-0.063
	(0.046)	(0.030)	(0.058)	(0.031)	(0.043)
Firm age	0.033***	0.022**	0.018	0.025***	0.029**
	(0.009)	(0.010)	(0.013)	(0.009)	(0.014)
Board size	0.007***	0.004	0.005*	0.006***	0.008***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.042	-0.024	-0.074*	-0.015	-0.079*
	(0.037)	(0.032)	(0.042)	(0.028)	(0.046)
Male director%	-0.291***	-0.253***	-0.175**	-0.195***	-0.193**
	(0.058)	(0.063)	(0.076)	(0.048)	(0.075)
CEO_individualism	0.109	0.188	0.238	0.066	0.212
	(0.121)	(0.133)	(0.172)	(0.113)	(0.169)
CEO_powerdistance	0.355**	0.341**	0.401**	0.075	0.493***
	(0.165)	(0.161)	(0.183)	(0.122)	(0.167)
CEO_indulgence	0.167**	0.164**	0.024	0.056	0.210**
	(0.069)	(0.083)	(0.115)	(0.055)	(0.098)
CEO_masculinity	0.142**	0.122	0.063	0.051	0.102
	(0.072)	(0.094)	(0.128)	(0.075)	(0.121)
CEO_longterm	0.150	0.002	-0.212	-0.002	-0.255
	(0.104)	(0.147)	(0.172)	(0.096)	(0.188)
Constant	-0.018	0.097	0.014	0.591***	-0.295
	(0.199)	(0.219)	(0.255)	(0.175)	(0.260)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table G. The moderating role of new CEO in CEO_UAI and Environmental Performance -Including additional cultural values as controls

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.279**	-0.307***	-0.237**	-0.194
	(0.111)	(0.115)	(0.119)	(0.158)
New CEO	-0.073	-0.098**	-0.144***	-0.056
	(0.045)	(0.046)	(0.050)	(0.069)
CEO_UAI* New CEO	0.125	0.167*	0.257**	0.095
	(0.092)	(0.095)	(0.105)	(0.147)
Firm size	0.045***	0.052***	0.068***	0.019
	(0.011)	(0.013)	(0.013)	(0.013)
R&D intensity	0.090	0.261	0.171	0.255
	(0.304)	(0.327)	(0.305)	(0.231)
Advertising intensity	0.178	0.033	0.091	-0.023

	(0.323)	(0.404)	(0.374)	(0.329)
Leverage	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.185***	0.223***	0.225***	0.072
	(0.062)	(0.066)	(0.071)	(0.069)
ROA	0.023	-0.015	0.027	0.097*
	(0.057)	(0.049)	(0.060)	(0.052)
Employee	0.059***	0.069***	0.058***	0.056***
	(0.011)	(0.013)	(0.013)	(0.013)
Tobin's Q	-0.033*	0.004	-0.001	-0.028
	(0.019)	(0.021)	(0.021)	(0.019)
Female CEO	0.031	0.031	0.031	0.059*
	(0.029)	(0.032)	(0.032)	(0.032)
CEO age	0.001	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.013	-0.000	-0.020	0.049
	(0.080)	(0.075)	(0.074)	(0.076)
CEO-chairman duality	-0.022	0.002	-0.015	-0.026
	(0.017)	(0.020)	(0.019)	(0.020)
MBA degree	0.004	0.000	0.012	-0.006
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	0.003	-0.018	-0.005	0.000
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.023	0.002	-0.006	-0.004
	(0.046)	(0.047)	(0.043)	(0.034)
Firm age	0.032***	0.028**	0.020*	0.041***
	(0.011)	(0.013)	(0.012)	(0.013)
Board size	0.011***	0.003	0.007**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.130***	-0.060	-0.069*	-0.091**
	(0.040)	(0.041)	(0.040)	(0.045)
Male director%	-0.251***	-0.269***	-0.242***	-0.208***
	(0.067)	(0.071)	(0.069)	(0.072)
CEO_individualism	0.146	-0.038	0.082	0.212
	(0.149)	(0.151)	(0.150)	(0.153)
CEO_powerdistance	0.219	0.223	0.029	0.280
	(0.169)	(0.174)	(0.177)	(0.197)
CEO_indulgence	0.138	0.163*	-0.025	0.225*
	(0.089)	(0.086)	(0.096)	(0.134)
CEO_masculinity	0.111	0.027	0.083	-0.017
	(0.108)	(0.112)	(0.107)	(0.111)
CEO_longterm	-0.029	0.081	-0.012	-0.237
	(0.140)	(0.152)	(0.149)	(0.166)
Constant	-0.090	0.087	0.007	-0.323
	(0.224)	(0.253)	(0.247)	(0.284)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table H. The moderating role of new CEO in CEO_UAI and Social Performance -Including additional cultural values as controls

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.083	-0.195	-0.292**	-0.117	-0.185
	(0.101)	(0.120)	(0.123)	(0.074)	(0.121)
New CEO	-0.045	-0.037	-0.056	-0.077**	-0.020
	(0.044)	(0.047)	(0.055)	(0.035)	(0.047)
CEO_UAI*New CEO	0.040	0.019	0.052	0.124*	-0.018
	(0.090)	(0.097)	(0.113)	(0.069)	(0.094)
Firm size	0.016	0.044***	0.028**	0.022**	0.034***
	(0.011)	(0.010)	(0.012)	(0.009)	(0.012)
R&D intensity	0.236	0.550**	0.006	0.454***	0.269
	(0.278)	(0.215)	(0.276)	(0.130)	(0.353)
Advertising intensity	0.749***	-0.095	0.750**	-0.285	0.095
	(0.270)	(0.354)	(0.329)	(0.354)	(0.423)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.110**	0.187***	0.133*	0.126***	0.170**
	(0.049)	(0.061)	(0.071)	(0.048)	(0.071)
ROA	0.036	-0.014	0.026	0.005	0.069
	(0.066)	(0.053)	(0.062)	(0.027)	(0.054)
Employee	0.054***	0.030***	0.046***	0.027***	0.043***
	(0.012)	(0.011)	(0.012)	(0.009)	(0.013)
Tobin's Q	-0.029*	0.029	-0.018	0.011	-0.004
	(0.017)	(0.018)	(0.023)	(0.013)	(0.019)
Female CEO	-0.020	0.032	0.031	0.024	0.028
	(0.023)	(0.028)	(0.030)	(0.020)	(0.037)
CEO age	-0.000	-0.001	-0.001	-0.002**	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.000	-0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.025	0.023	0.067	-0.025	0.047
	(0.069)	(0.056)	(0.086)	(0.048)	(0.066)
CEO-chairman duality	-0.017	0.012	-0.006	0.005	-0.004
	(0.015)	(0.016)	(0.020)	(0.014)	(0.018)
MBA degree	0.026**	0.017	0.030*	0.011	0.012
	(0.011)	(0.012)	(0.017)	(0.010)	(0.014)
Number of titles	-0.001	-0.012	-0.011	-0.002	-0.003
	(0.012)	(0.013)	(0.015)	(0.010)	(0.015)
Founder CEO	-0.020	0.019	0.016	-0.005	-0.048
	(0.046)	(0.030)	(0.058)	(0.031)	(0.042)
Firm age	0.033***	0.022**	0.019	0.025***	0.030**
	(0.009)	(0.011)	(0.013)	(0.009)	(0.014)
Board size	0.008***	0.004	0.006*	0.006***	0.008***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.043	-0.024	-0.074*	-0.015	-0.079*
	(0.037)	(0.032)	(0.042)	(0.028)	(0.046)
Male director%	-0.292***	-0.252***	-0.177**	-0.198***	-0.191**
	(0.057)	(0.062)	(0.075)	(0.049)	(0.075)
CEO_individualism	0.108	0.192	0.229	0.062	0.219

	(0.121)	(0.135)	(0.173)	(0.117)	(0.168)
CEO_powerdistance	0.339**	0.331**	0.370**	0.062	0.485***
	(0.162)	(0.161)	(0.179)	(0.129)	(0.164)
CEO_indulgence	0.162**	0.159*	0.019	0.055	0.204**
	(0.069)	(0.083)	(0.117)	(0.056)	(0.098)
CEO_masculinity	0.141**	0.121	0.064	0.047	0.102
	(0.071)	(0.094)	(0.130)	(0.077)	(0.122)
CEO_longterm	0.133	-0.017	-0.234	-0.014	-0.274
	(0.105)	(0.148)	(0.175)	(0.099)	(0.189)
Constant	0.036	0.141	0.087	0.654***	-0.263
	(0.199)	(0.224)	(0.257)	(0.183)	(0.260)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table I. CEO UAI and Environmental Performance-Including 3-digit SIC code

	(1) Environmental performance t+1	(2) Resource use t+1	(3) emissions t+1	(4) Innovation t+1
CEO_UAI	-0.185***	-0.171**	-0.091	-0.083
	(0.071)	(0.071)	(0.073)	(0.077)
Firm size	0.051***	0.067***	0.082***	0.013
	(0.014)	(0.017)	(0.017)	(0.015)
R&D intensity	0.214	0.424	0.316	0.391
	(0.328)	(0.364)	(0.352)	(0.245)
Advertising intensity	0.063	-0.079	-0.027	-0.234
	(0.369)	(0.477)	(0.402)	(0.351)
Leverage	0.000***	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.165**	0.199***	0.178**	0.078
	(0.065)	(0.069)	(0.073)	(0.068)
ROA	0.018	-0.021	0.022	0.096*
	(0.058)	(0.052)	(0.063)	(0.054)
Employee	0.055***	0.058***	0.049***	0.059***
	(0.015)	(0.017)	(0.017)	(0.016)
Tobin's Q	-0.036*	0.003	-0.007	-0.027
	(0.021)	(0.023)	(0.022)	(0.020)
Female CEO	0.024	0.036	0.030	0.048
	(0.029)	(0.032)	(0.032)	(0.031)
CEO age	0.001	0.000	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.000	-0.000	0.000	-0.001
	(0.001)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.015	-0.004	-0.024	0.051
	(0.082)	(0.076)	(0.077)	(0.078)
CEO-chairman duality	-0.019	0.005	-0.011	-0.017
	(0.018)	(0.020)	(0.020)	(0.020)

MBA degree	0.002	0.001	0.014	-0.008
	(0.013)	(0.015)	(0.015)	(0.015)
Number of titles	-0.001	-0.020	-0.008	-0.005
	(0.013)	(0.017)	(0.017)	(0.015)
Founder CEO	-0.031	-0.002	-0.016	-0.004
	(0.048)	(0.050)	(0.045)	(0.033)
Firm age	0.031***	0.029**	0.019	0.048***
	(0.012)	(0.014)	(0.013)	(0.013)
Board size	0.010***	0.001	0.005*	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.124***	-0.051	-0.071*	-0.076*
	(0.042)	(0.042)	(0.041)	(0.046)
Male director%	-0.258***	-0.247***	-0.221***	-0.236***
	(0.069)	(0.074)	(0.072)	(0.074)
Constant	0.188	0.012	-0.131	-0.028
	(0.197)	(0.220)	(0.247)	(0.218)
Year FE	Yes	Yes	Yes	Yes
Industry FE (3-digit SIC)	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table J. CEO UAI and Social Performance-Including 3-digit SIC code

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.019	-0.127*	-0.107	-0.052	-0.047
	(0.058)	(0.070)	(0.099)	(0.061)	(0.072)
Firm size	0.024*	0.056***	0.043**	0.032***	0.034**
	(0.014)	(0.013)	(0.017)	(0.011)	(0.016)
R&D intensity	0.287	0.615***	0.054	0.549***	0.085
	(0.316)	(0.238)	(0.307)	(0.135)	(0.382)
Advertising intensity	0.810**	-0.260	0.754**	-0.410	0.008
	(0.320)	(0.416)	(0.382)	(0.430)	(0.471)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.086	0.154**	0.091	0.100**	0.150**
	(0.053)	(0.063)	(0.074)	(0.050)	(0.073)
ROA	0.031	-0.017	0.020	0.004	0.059
	(0.066)	(0.053)	(0.064)	(0.028)	(0.055)
Employee	0.045***	0.017	0.030*	0.017	0.038**
	(0.015)	(0.014)	(0.016)	(0.011)	(0.017)
Tobin's Q	-0.029	0.021	-0.021	0.011	-0.008
	(0.019)	(0.020)	(0.025)	(0.014)	(0.021)
Female CEO	-0.017	0.034	0.030	0.028	0.025
	(0.022)	(0.028)	(0.030)	(0.021)	(0.038)
CEO age	0.000	-0.001	-0.001	-0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	-0.000	0.001	0.000	-0.001

	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO bonus ratio	0.024	0.017	0.062	-0.035	0.050
	(0.070)	(0.059)	(0.087)	(0.050)	(0.068)
CEO-chairman duality	-0.016	0.018	0.001	0.008	0.007
	(0.016)	(0.017)	(0.021)	(0.015)	(0.018)
MBA degree	0.025**	0.016	0.032*	0.008	0.012
	(0.012)	(0.012)	(0.018)	(0.010)	(0.015)
Number of titles	-0.004	-0.013	-0.015	-0.003	-0.009
	(0.012)	(0.013)	(0.016)	(0.011)	(0.015)
Founder CEO	-0.020	0.014	0.009	-0.006	-0.060
	(0.050)	(0.033)	(0.061)	(0.032)	(0.046)
Firm age	0.030***	0.025**	0.013	0.025***	0.028*
	(0.011)	(0.012)	(0.015)	(0.009)	(0.015)
Board size	0.007**	0.003	0.005	0.006***	0.007**
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.037	-0.022	-0.069	-0.013	-0.068
	(0.039)	(0.033)	(0.045)	(0.029)	(0.048)
Male director%	-0.281***	-0.249***	-0.159**	-0.184***	-0.195**
	(0.059)	(0.064)	(0.079)	(0.051)	(0.077)
Constant	0.331*	0.332*	0.107	0.602***	0.193
	(0.189)	(0.179)	(0.248)	(0.145)	(0.212)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE (3-digit SIC)	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table K. The moderating role of CEO bonus ratio in CEO_UAI and Environmental Performance -Including 3-digit SIC code

	(1) Environmental performance t+1	(2) Resource use t+1	(3) Emissions t+1	(4) Innovation t+1
CEO_UAI	-0.165**	-0.157**	-0.072	-0.084
	(0.068)	(0.068)	(0.071)	(0.078)
CEO bonus ratio	0.610**	0.424	0.583**	0.021
	(0.268)	(0.288)	(0.247)	(0.362)
CEO_UAI*CEO bonus ratio	-1.231***	-0.886*	-1.255***	0.063
	(0.463)	(0.518)	(0.429)	(0.715)
Firm size	0.051***	0.067***	0.081***	0.013
	(0.014)	(0.017)	(0.017)	(0.015)
R&D intensity	0.225	0.432	0.328	0.390
	(0.332)	(0.369)	(0.357)	(0.244)
Advertising intensity	0.073	-0.071	-0.015	-0.235
	(0.371)	(0.477)	(0.403)	(0.352)
Leverage	0.000***	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.171***	0.202***	0.183**	0.078

	(0.064)	(0.070)	(0.073)	(0.068)
ROA	0.013	-0.025	0.016	0.096*
	(0.058)	(0.053)	(0.064)	(0.053)
Employee	0.055***	0.058***	0.050***	0.059***
	(0.015)	(0.017)	(0.017)	(0.016)
Tobin's Q	-0.037*	0.003	-0.008	-0.027
	(0.021)	(0.023)	(0.022)	(0.020)
Female CEO	0.026	0.037	0.031	0.048
	(0.029)	(0.032)	(0.032)	(0.031)
CEO age	0.001	0.000	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.000	-0.000	0.000	-0.001
	(0.001)	(0.002)	(0.001)	(0.001)
CEO-chairman duality	-0.019	0.005	-0.011	-0.017
	(0.018)	(0.020)	(0.020)	(0.020)
MBA degree	0.001	0.000	0.013	-0.008
	(0.013)	(0.015)	(0.015)	(0.015)
Number of titles	-0.002	-0.020	-0.008	-0.005
	(0.013)	(0.017)	(0.016)	(0.015)
Founder CEO	-0.033	-0.004	-0.018	-0.004
	(0.048)	(0.051)	(0.045)	(0.033)
Firm age	0.030**	0.028**	0.018	0.048***
	(0.012)	(0.014)	(0.013)	(0.014)
Board size	0.010***	0.001	0.005*	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.123***	-0.051	-0.070*	-0.076*
	(0.042)	(0.042)	(0.041)	(0.046)
Male director%	-0.256***	-0.245***	-0.219***	-0.236***
	(0.069)	(0.074)	(0.072)	(0.074)
Constant	0.182	0.009	-0.136	-0.027
	(0.197)	(0.221)	(0.247)	(0.218)
Year FE	Yes	Yes	Yes	Yes
Industry FE (3-digit SIC)	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table L. The moderating role of CEO bonus ratio in CEO_UAI and Social Performance -Including 3-digit SIC code

	(1) Social performance t+1	(2) Workforce t+1	(3) Human rights t+1	(4) Community t+1	(5) Production responsibility t+1
CEO_UAI	-0.007	-0.120*	-0.084	-0.040	-0.043
	(0.057)	(0.069)	(0.100)	(0.056)	(0.073)
CEO bonus ratio	0.397*	0.243	0.775**	0.333	0.179
	(0.228)	(0.258)	(0.322)	(0.330)	(0.328)
CEO_UAI*CEO bonus ratio	-0.770*	-0.467	-1.474**	-0.761	-0.266
	(0.413)	(0.498)	(0.615)	(0.643)	(0.669)
Firm size	0.024*	0.056***	0.042**	0.032***	0.034**

	(0.014)	(0.013)	(0.017)	(0.011)	(0.016)
R&D intensity	0.294	0.619**	0.068	0.556***	0.088
	(0.320)	(0.241)	(0.305)	(0.134)	(0.382)
Advertising intensity	0.818**	-0.256	0.768**	-0.404	0.010
	(0.321)	(0.417)	(0.383)	(0.432)	(0.471)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.089*	0.156**	0.097	0.103**	0.152**
	(0.053)	(0.063)	(0.073)	(0.050)	(0.073)
ROA	0.028	-0.019	0.013	0.001	0.057
	(0.067)	(0.053)	(0.063)	(0.028)	(0.054)
Employee	0.045***	0.017	0.030*	0.017	0.038**
	(0.015)	(0.014)	(0.016)	(0.011)	(0.017)
Tobin's Q	-0.030	0.021	-0.022	0.010	-0.008
	(0.019)	(0.020)	(0.025)	(0.014)	(0.021)
Female CEO	-0.017	0.035	0.031	0.029	0.025
	(0.022)	(0.028)	(0.030)	(0.021)	(0.038)
CEO age	0.000	-0.001	-0.001	-0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	0.000	-0.000	0.001	0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO-chairman duality	-0.016	0.018	0.001	0.009	0.007
	(0.016)	(0.017)	(0.021)	(0.014)	(0.018)
MBA degree	0.025**	0.016	0.032*	0.007	0.012
	(0.012)	(0.012)	(0.018)	(0.010)	(0.015)
Number of titles	-0.005	-0.014	-0.015	-0.004	-0.009
	(0.012)	(0.013)	(0.016)	(0.011)	(0.015)
Founder CEO	-0.021	0.013	0.006	-0.008	-0.060
	(0.050)	(0.033)	(0.061)	(0.031)	(0.046)
Firm age	0.029***	0.024**	0.012	0.025***	0.028*
	(0.011)	(0.012)	(0.015)	(0.009)	(0.015)
Board size	0.006**	0.003	0.005	0.006***	0.007**
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Foreign director%	-0.037	-0.022	-0.068	-0.012	-0.068
	(0.039)	(0.033)	(0.045)	(0.029)	(0.048)
Male director%	-0.279***	-0.249***	-0.157**	-0.183***	-0.195**
	(0.059)	(0.064)	(0.079)	(0.051)	(0.077)
Constant	0.328*	0.330*	0.100	0.598***	0.192
	(0.189)	(0.179)	(0.249)	(0.144)	(0.212)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE (3-digit SIC)	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table M. The moderating role of newly appointed CEO in CEO_UAI and Environmental Performance -Including 3-digit SIC code

	(1)	(2)	(3)	(4)

	Environmental performancet+1	Resource use t+1	Emissions t+1	Innovation t+1
CEO_UAI	-0.240**	-0.236***	-0.209**	-0.129
	(0.094)	(0.090)	(0.096)	(0.130)
New CEO	-0.070	-0.086*	-0.139***	-0.055
	(0.046)	(0.046)	(0.050)	(0.071)
CEO_UAI* New CEO	0.117	0.140	0.244**	0.096
	(0.095)	(0.096)	(0.105)	(0.151)
Firm size	0.051***	0.066***	0.081***	0.012
	(0.014)	(0.017)	(0.017)	(0.015)
R&D intensity	0.205	0.412	0.297	0.384
	(0.329)	(0.366)	(0.352)	(0.245)
Advertising intensity	0.059	-0.084	-0.038	-0.238
	(0.371)	(0.484)	(0.409)	(0.352)
Leverage	0.000***	0.000*	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.172***	0.207***	0.191***	0.084
	(0.065)	(0.070)	(0.073)	(0.068)
ROA	0.020	-0.019	0.025	0.098*
	(0.057)	(0.051)	(0.060)	(0.053)
Employee	0.056***	0.060***	0.051***	0.060***
	(0.015)	(0.017)	(0.017)	(0.016)
Tobin's Q	-0.037*	0.001	-0.009	-0.028
	(0.021)	(0.023)	(0.022)	(0.020)
Female CEO	0.024	0.036	0.030	0.048
	(0.029)	(0.032)	(0.032)	(0.031)
CEO age	0.001	-0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.018	-0.001	-0.019	0.053
	(0.082)	(0.075)	(0.077)	(0.078)
CEO-chairman duality	-0.022	0.002	-0.014	-0.018
	(0.018)	(0.020)	(0.020)	(0.021)
MBA degree	0.002	0.001	0.014	-0.007
	(0.013)	(0.014)	(0.014)	(0.015)
Number of titles	-0.001	-0.020	-0.008	-0.005
	(0.013)	(0.016)	(0.016)	(0.015)
Founder CEO	-0.023	0.009	-0.002	0.001
	(0.047)	(0.050)	(0.043)	(0.033)
Firm age	0.031**	0.028**	0.019	0.048***
	(0.012)	(0.014)	(0.013)	(0.014)
Board size	0.010***	0.001	0.005*	0.007**
	(0.003)	(0.003)	(0.003)	(0.003)
Foreign director%	-0.123***	-0.051	-0.071*	-0.076
	(0.042)	(0.042)	(0.041)	(0.046)
Male director%	-0.259***	-0.248***	-0.224***	-0.237***
	(0.069)	(0.074)	(0.072)	(0.074)
Constant	0.231	0.068	-0.044	0.007
	(0.200)	(0.223)	(0.246)	(0.226)
Year FE	Yes	Yes	Yes	Yes
Industry FE (3-digit SIC)	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01,

** p<0.05, * p<0.1.

Appendix Table N. The moderating role of newly appointed CEO in CEO_UAI and Social Performance -Including 3-digit SIC code

	(1) Social performancet+1	(2) Workforcet+1	(3) Human rightst+1	(4) Communityt+1	(5) Production responsibilityt+1
CEO_UAI	-0.026	-0.119	-0.118	-0.103	-0.022
	(0.084)	(0.095)	(0.109)	(0.074)	(0.093)
New CEO	-0.041	-0.029	-0.049	-0.071**	-0.012
	(0.045)	(0.047)	(0.057)	(0.035)	(0.047)
CEO_UAI*New CEO	0.028	-0.001	0.038	0.111	-0.034
	(0.091)	(0.098)	(0.116)	(0.068)	(0.096)
Firm size	0.024*	0.055***	0.042**	0.031***	0.033**
	(0.014)	(0.013)	(0.017)	(0.011)	(0.016)
R&D intensity	0.284	0.612**	0.049	0.542***	0.080
	(0.319)	(0.241)	(0.310)	(0.133)	(0.384)
Advertising intensity	0.807**	-0.253	0.756**	-0.413	0.017
	(0.321)	(0.415)	(0.383)	(0.436)	(0.471)
Leverage	0.000***	0.000***	-0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.090*	0.158**	0.097	0.107**	0.153**
	(0.053)	(0.063)	(0.075)	(0.049)	(0.073)
ROA	0.031	-0.018	0.019	0.006	0.057
	(0.067)	(0.054)	(0.064)	(0.028)	(0.055)
Employee	0.047***	0.020	0.032*	0.018*	0.040**
	(0.015)	(0.014)	(0.017)	(0.011)	(0.016)
Tobin's Q	-0.031*	0.019	-0.023	0.009	-0.009
	(0.018)	(0.020)	(0.025)	(0.014)	(0.021)
Female CEO	-0.018	0.034	0.029	0.028	0.024
	(0.022)	(0.028)	(0.030)	(0.021)	(0.038)
CEO age	-0.000	-0.001	-0.001	-0.002*	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.001	-0.002	-0.001	-0.001	-0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
CEO bonus ratio	0.026	0.020	0.065	-0.032	0.052
	(0.070)	(0.058)	(0.087)	(0.050)	(0.067)
CEO-chairman duality	-0.020	0.013	-0.004	0.005	0.002
	(0.016)	(0.017)	(0.021)	(0.015)	(0.018)
MBA degree	0.027**	0.017	0.034*	0.008	0.014
	(0.011)	(0.012)	(0.018)	(0.010)	(0.014)
Number of titles	-0.004	-0.013	-0.015	-0.003	-0.009
	(0.012)	(0.013)	(0.016)	(0.011)	(0.015)
Founder CEO	-0.006	0.028	0.025	0.003	-0.045
	(0.049)	(0.032)	(0.061)	(0.031)	(0.045)
Firm age	0.030***	0.025**	0.013	0.025***	0.028*
	(0.011)	(0.012)	(0.015)	(0.009)	(0.015)
Board size	0.007**	0.003	0.005	0.006***	0.007**
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)

Foreign director%	-0.037	-0.022	-0.068	-0.012	-0.068
	(0.039)	(0.033)	(0.045)	(0.029)	(0.048)
Male director	-0.280***	-0.248***	-0.158**	-0.185***	-0.192**
	(0.059)	(0.064)	(0.079)	(0.051)	(0.077)
Constant	0.367*	0.358**	0.143	0.647***	0.210
	(0.191)	(0.181)	(0.250)	(0.144)	(0.214)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE (3-digit SIC)	Yes	Yes	Yes	Yes	Yes
Observations	4,839	4,839	4,839	4,839	4,839

Note: Robust standard errors clustered at firm level in parentheses; The mean VIF is below the threshold value 5, multicollinearity is not a serious concern here; *** p<0.01, ** p<0.05, * p<0.1.

Figure 1. Interaction effect for CEO UAI and CEO bonus ratio in Environmental Performance

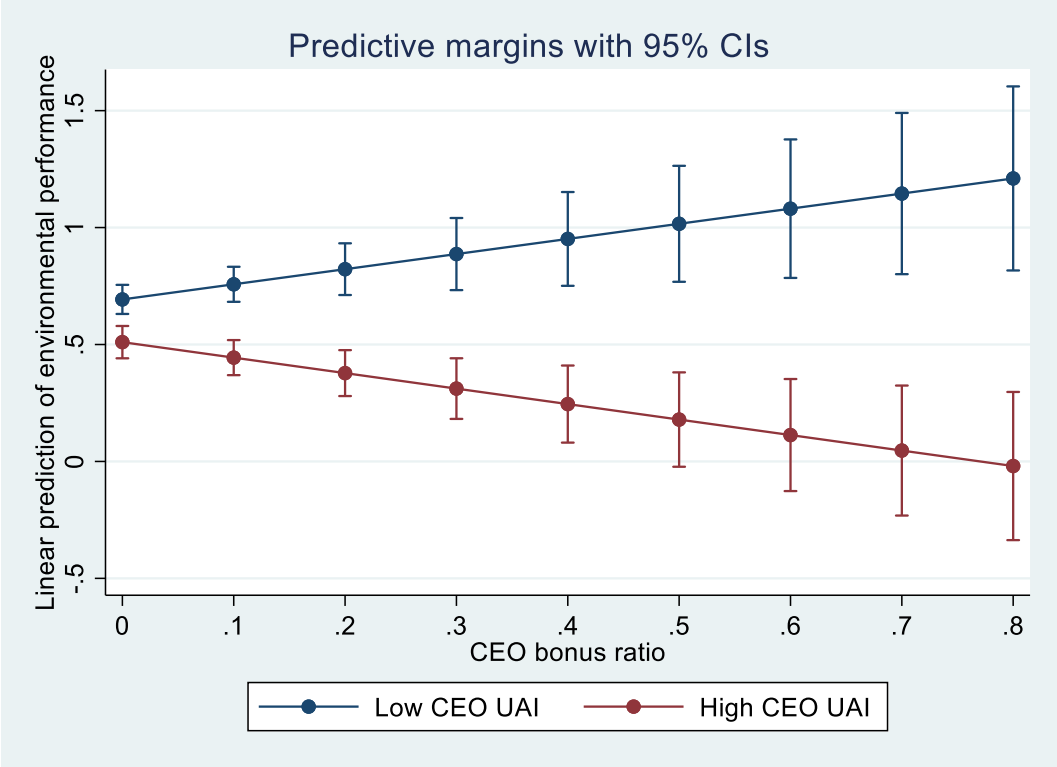


Figure 2. Interaction effect for CEO UAI and CEO bonus ratio in Resource Use

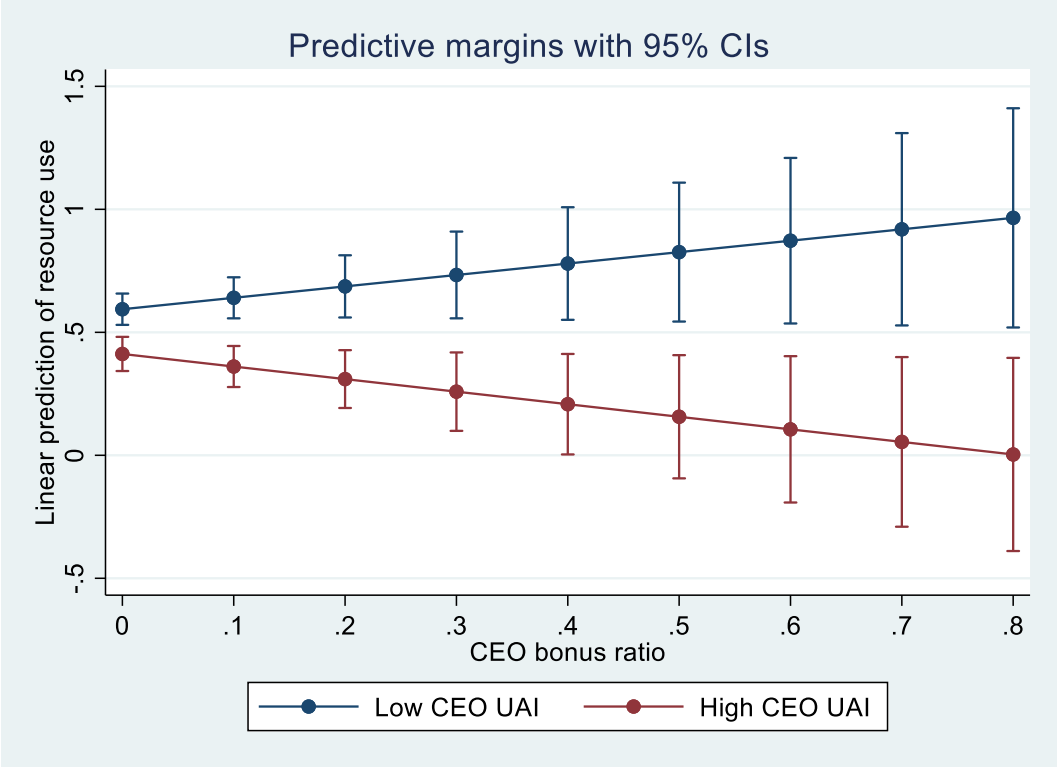


Figure 3. Interaction effect for CEO UAI and CEO bonus ratio in Emissions

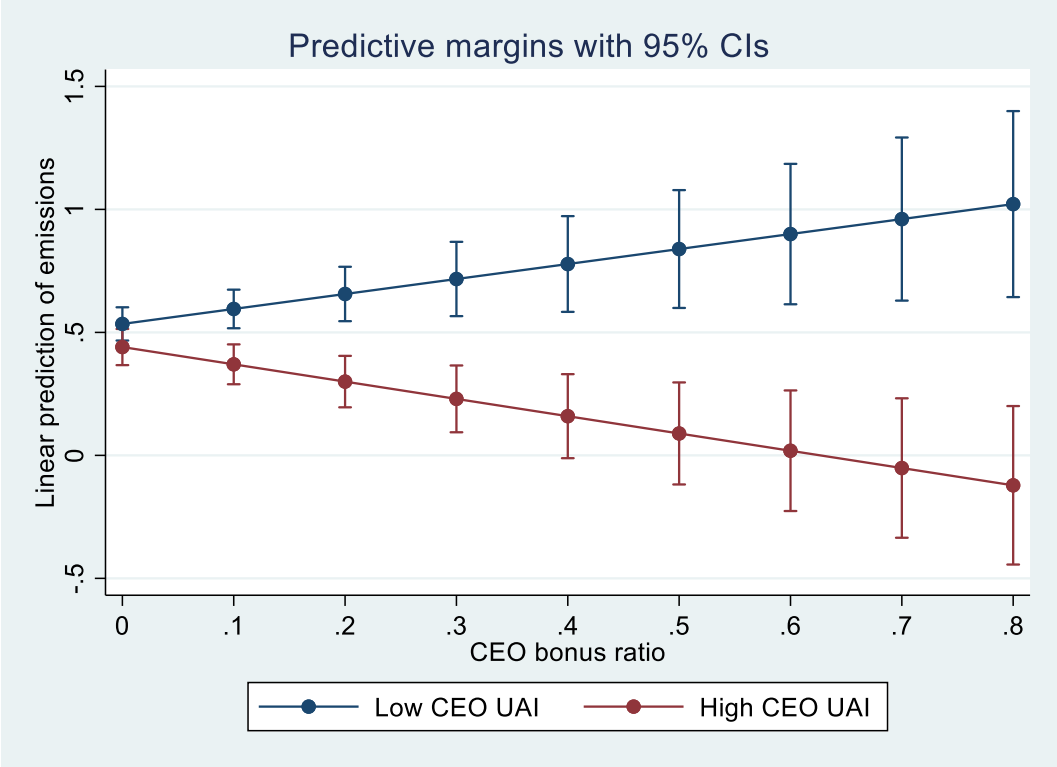


Figure 4. Interaction effect for CEO UAI and CEO bonus ratio in Social Performance

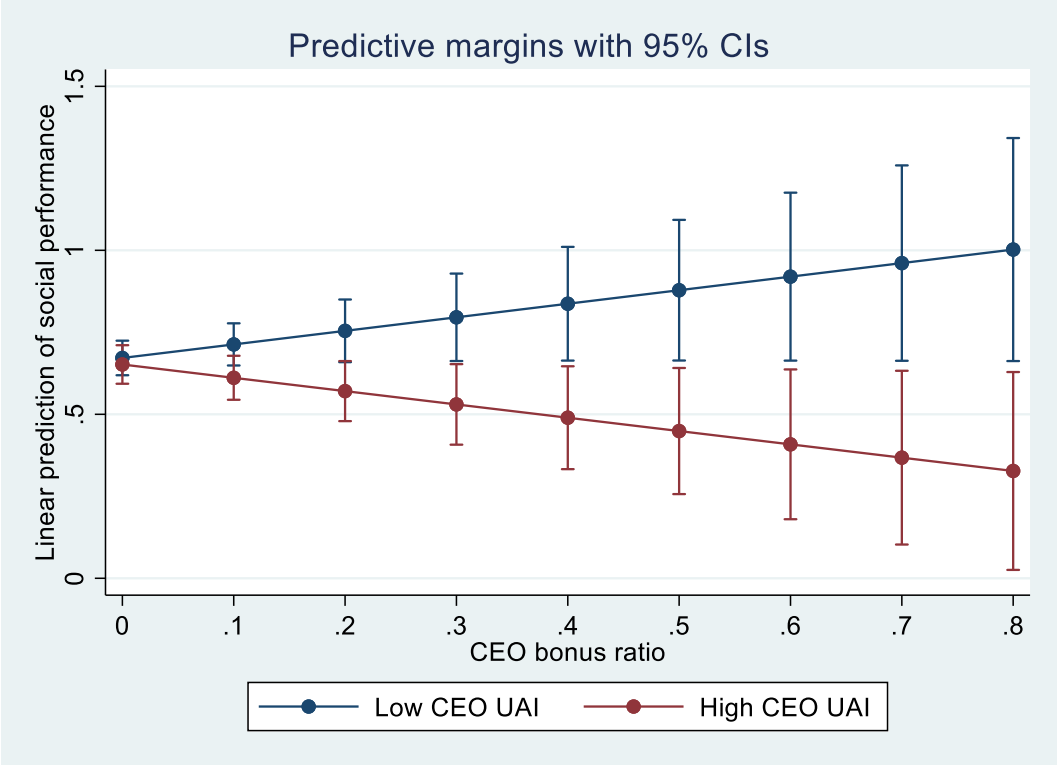


Figure 5. Interaction effect for CEO UAI and CEO bonus ratio in Human Rights

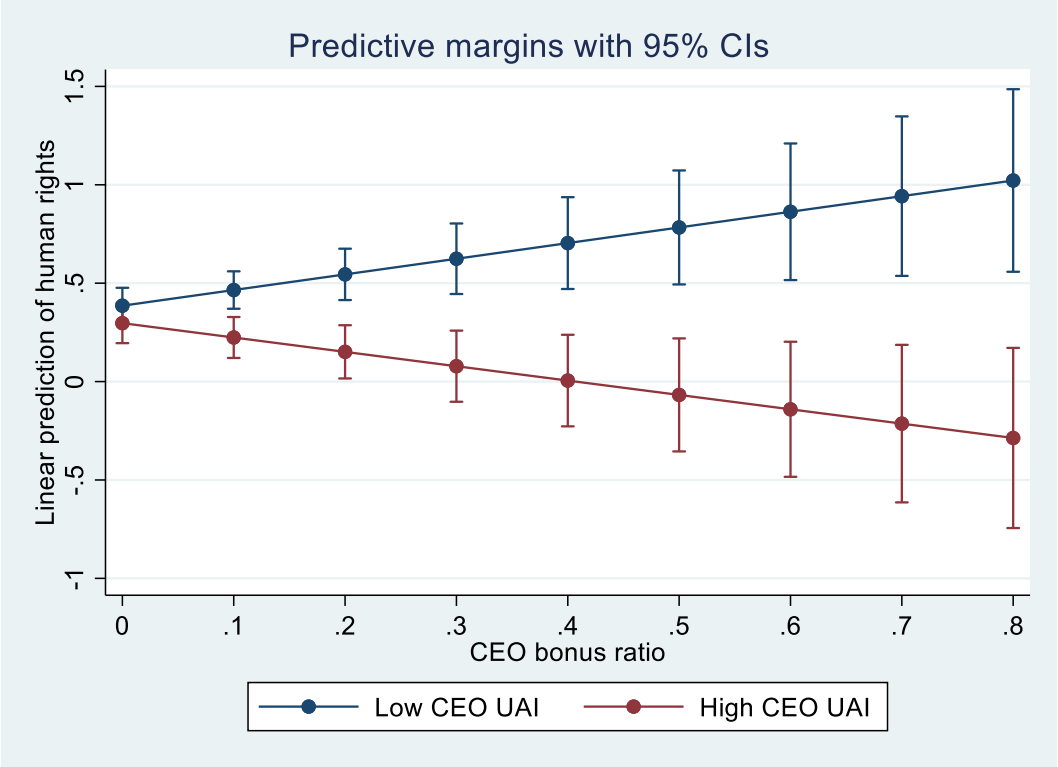


Figure 6. Interaction effect for CEO UAI and Newly Appointed CEO in Resource Use

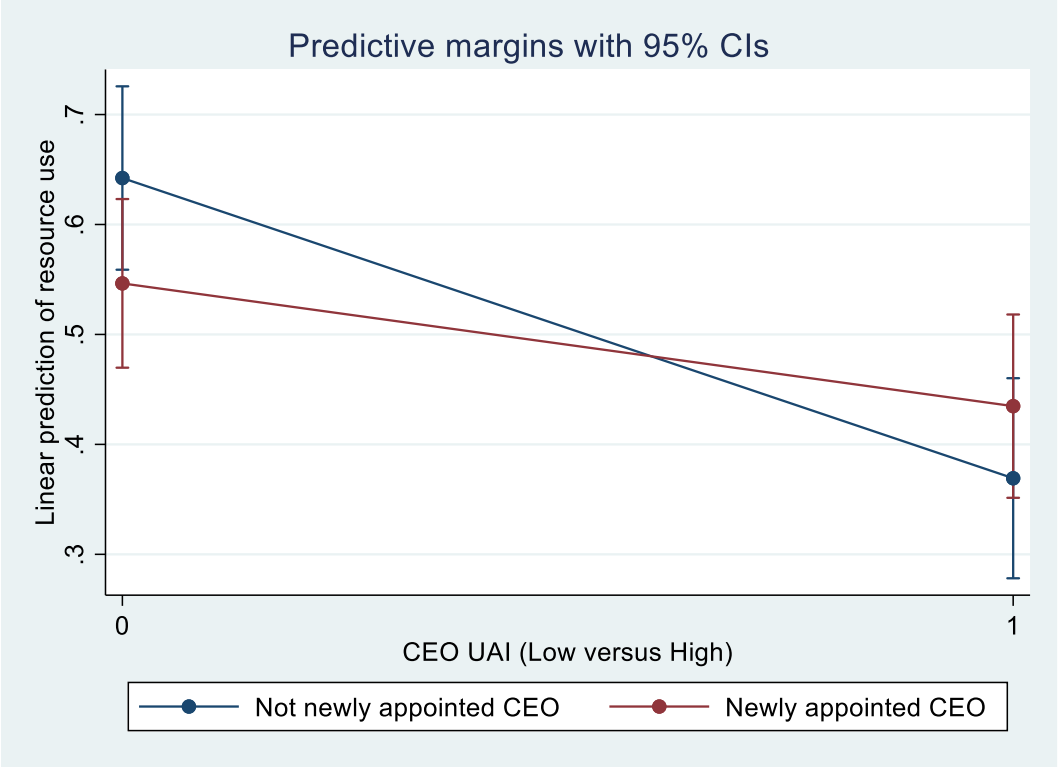


Figure 7. Interaction effect for CEO UAI and Newly Appointed CEO in Emissions

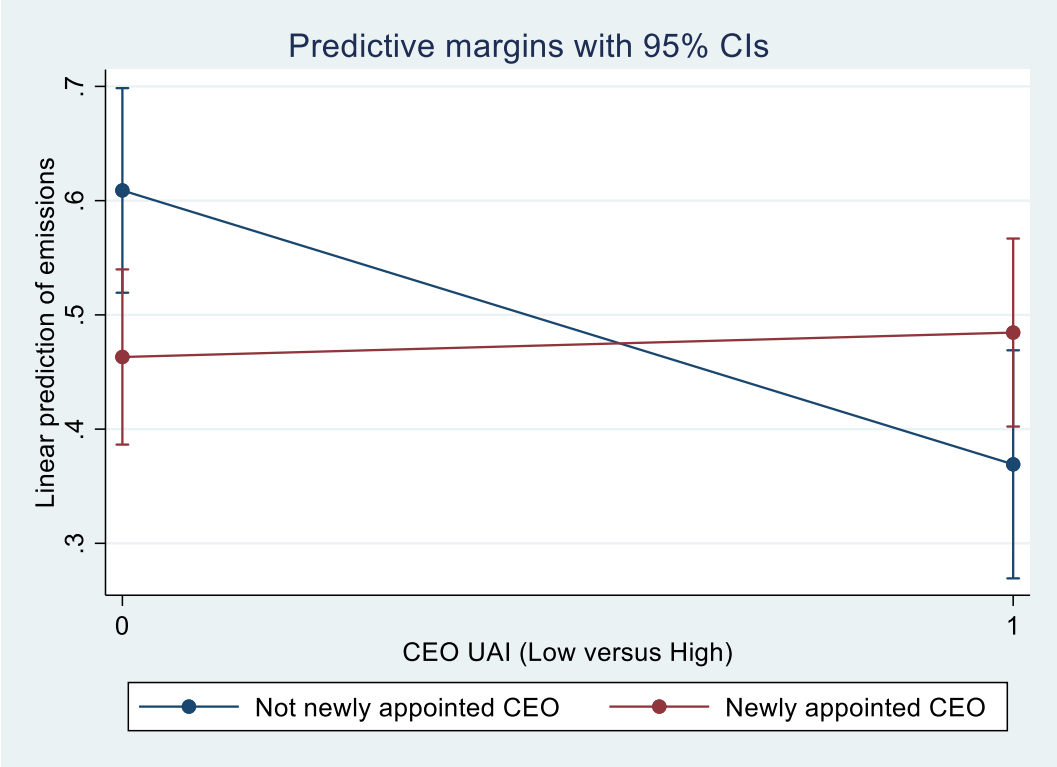
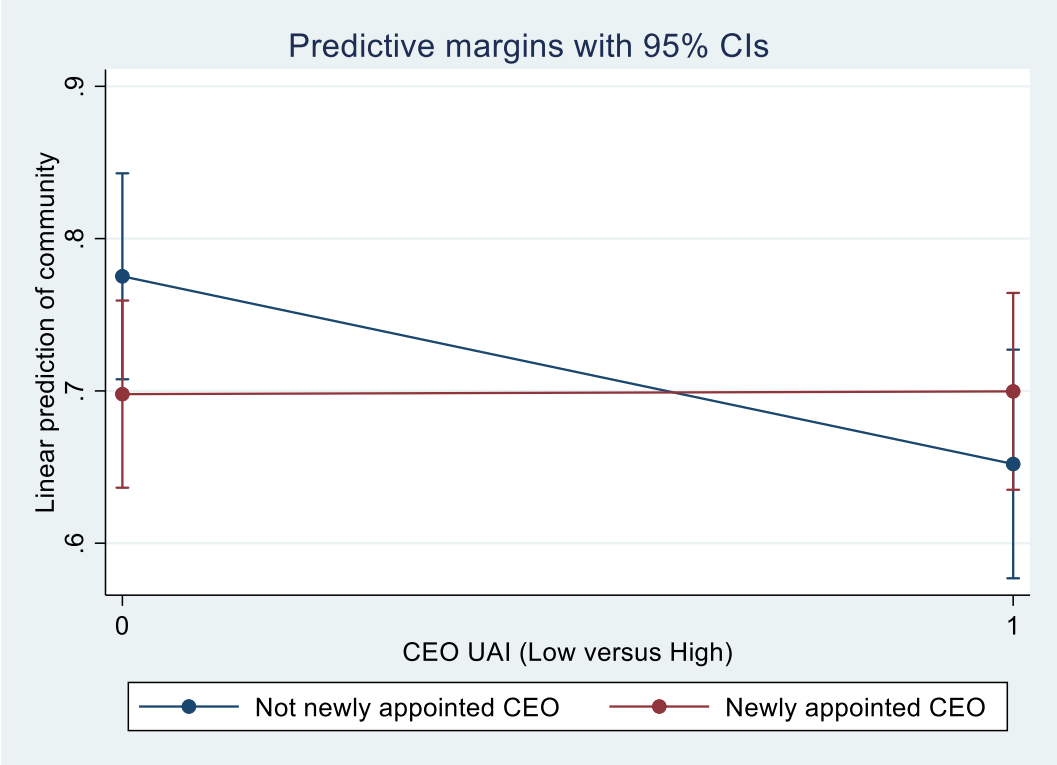


Figure 8. Interaction effect for CEO UAI and Newly Appointed CEO in Community



Chapter 3: Balancing on the Ledge: How Chief Sustainability Officers Align Philanthropy Donations and Strategic Investments

ABSTRACT

This study examines the role of Chief Sustainability Officers (CSOs) in managing the interdependencies between philanthropic donations and strategic investments in large U.S. corporations. Drawing on upper echelons theory and the literature on functional executives in top management teams, we argue that CSOs serve as key integrators, aligning sustainability efforts with corporate strategy. A central premise of our argument is that firms may overcommit resources by independently allocating funds to philanthropy and strategic investments without coordination. When philanthropic donations function as a form of stakeholder appeasement, firms may have opportunities to reduce expenditures in areas such as R&D and marketing without compromising strategic objectives. CSOs—particularly those with government experience—are well positioned to identify these trade-offs and implement efficiency-maximizing adjustments. We hypothesize that firms with a CSO, especially one with a public-sector background, are more likely to curtail excess strategic investments when substantial philanthropic giving is already in place. Using a dataset of Fortune 100 companies from 2005 to 2020, we analyze the relationship between CSO presence, philanthropic donations, and strategic investments in R&D and advertising. Our findings reveal a negative association between philanthropic donations and strategic investments in firms with a CSO, indicating that CSOs play a role in optimizing resource allocation. This effect is stronger when the CSO has a government background, emphasizing the importance of public-sector experience in leveraging philanthropy to balance social and business objectives.

Keywords: Chief Sustainability Officers, philanthropic donations, strategic investments, interdependencies

INTRODUCTION

One of the fundamental strategic and organizational challenges firms face is effectively managing interdependencies across functions, as these interdependencies can positively generate synergies or negatively lead to inefficiencies and resource misallocation (Puranam et al., 2012). Within this broader theoretical framework, the challenge of balancing sustainability and business investments has emerged as a critical issue in corporate strategy (Fosfuri et al., 2016; Seo et al., 2021). Chief Sustainability Officers (CSOs) play a central role in shaping these outcomes, as they are responsible for navigating and integrating business and sustainable interdependencies (Strand, 2014; Peters et al., 2019; Fu et al., 2020). A clear example of this dual role is an initiative introduced by Michael Kobori, CSO of Starbucks, which allows customers to use reusable cups for drive-thru and mobile orders. This policy reflects a dual impact: on the one hand, it reinforces the company's commitment to reducing waste and CO_2 emissions, aligning with its sustainability objectives; on the other hand, it serves as a cost-saving strategy within its value chain (Inc. Magazine, January 4, 2024).

The role of CSOs is now widely recognized as integral members of the top management team in many large corporations in the U.S. and Europe (Strand, 2013; 2014; Weinreb Group, 2021). Over the past decade, CSOs have gradually gained legitimacy as executive leaders, exerting a growing influence on corporate decision-making (Finkelstein et al., 2009; Hambrick & Finkelstein, 1984; Menz et al., 2012). A recent survey of 1,640 companies across 62 countries found that 28% of CSOs hold executive-level positions alongside board members and traditional C-suite executives. Furthermore, in North America, 48% of firms place CSOs at the first or second

management level within their organizational hierarchy (Urso, 2022).

Despite the growing presence of CSOs in corporate leadership, several aspects of their impact remain underexplored. Existing research has primarily examined their role in advancing sustainability outcomes, focusing on key areas of sustainable development goals (Farri et al., 2023; Miller & Serafeim, 2014; Strand, 2013; Fu et al., 2020; Peters & Romi, 2015; Thun & Zülch, 2023; Aguilera et al., 2021; Kanashiro & Rivera, 2019; Rossi & Tarquinio, 2017; Dixon-Fowler et al., 2017; Henry, Buyl, & Jansen, 2019; Peters, Romi, & Sanchez, 2019). Our study shifts the focus on an overlooked dimension of the CSO's influence, specifically, their role in shaping firm strategy and competitive resource allocation, given the limited attention that has been given up to date (for exceptions, see Kiron et al., 2012; Wiengarten et al., 2017).

To address this, this study examines how the presence of a CSO influences firms' resource allocation toward competitive investments. Drawing from upper echelons theory (Hambrick & Mason, 1984; Carpenter et al., 2004) and the research sub-stream on functional top management team executives (Menz, 2012), we develop hypotheses on how the CSO— as a functional executive with decision-making authority and coordination capabilities—can serve as a key integrator, transforming interdependencies between social and economic objectives into synergies.

Specifically, we examine the relationship between philanthropic donations, R&D expenditures, and advertising expenses in firms with and without a CSO. While R&D and advertising are well-established proxies for strategic investments, we introduce philanthropic donations as a key variable to establish both a theoretical and empirical

baseline. We do so for two reasons: first, philanthropic donations are relatively independent of direct CSO decision-making, providing an exogenous source of variation; and second, they have been identified as a mechanism that bridges social and economic goals through interdependencies (Bertrand et al., 2020; Bertrand et al., 2021; Gatignon, Gama, & DeMello, 2023). Importantly, we develop a framework that leverages the heterogeneity in CSO presence to assess how philanthropic donations impact firms' competitive investment decisions. This approach allows us to move beyond a simple direct effect of CSOs on strategic investments and instead examine more clearly the role in managing interdependencies.

Empirically, we construct a sample of the largest U.S. corporations listed in the Fortune 100, incorporating data on philanthropic donations over the period 2005–2020. For each firm-year observation, we collect data on the presence of a CSO, along with detailed information on CSOs' demographic attributes, educational background, and career histories. Our findings reveal that, on average, the presence of a CSO is associated with a negative relationship between philanthropic donations and strategic investments, with firms reducing expenditures on R&D and advertising when philanthropic donations are present. Furthermore, this effect is significantly stronger when the CSO has a government background, suggesting that CSOs with prior public-sector experience may be more adept at leveraging philanthropy to balance interdependencies between sustainability and business objectives. After our main regression, we also perform a series of analyses to provide suggestive evidence that for synergies between donations and competitive investments to happen, there is a need for government background. Just being experts in non-for profits or in the core business do not seem to lead to cuts in

competitive investments as a function of philanthropic donations.

Our paper makes several key contributions. First, we contribute directly to the limited literature on the role of CSOs in firms' strategy (Kiron et al., 2012; Wiengarten et al., 2017). To our knowledge, this study is among the first to empirically demonstrate how CSOs influence firms' strategic investment decisions. Specifically, we show that CSOs can identify and operationalize potential redundancies between strategic investments and philanthropic donations, thereby enhancing corporate efficiency. This finding provides important evidence on the multifaceted nature of the CSO's role, highlighting its dual-task function and its impact not only on sustainability initiatives but also on broader strategic decision-making within the firm (Wang et al., 2024; Seo et al., 2021). It is important to clarify that our theoretical argument does not assume that philanthropic donations and strategic investments act purely as substitutes. Rather, we argue that redundancy emerges due to the independent allocation of resources across these channels without full coordination. Importantly, the presence of complementarities between philanthropic donations and strategic investments can reinforce this effect.

This insight leads to a broader theoretical implication regarding the relationship between strategy and organizational structure. While we do not directly engage with the long-standing debate on whether strategy follows structure or vice versa (Mintzberg, 1979; Harris & Ruefli, 2000), our findings contribute to this discourse by demonstrating that successfully managing interdependencies requires a dedicated managerial position with both hierarchical authority and task-specific expertise (Zhou, 2011; Puranam et al., 2012). More broadly, our study reconceptualizes sustainability-business interdependencies by proposing a new perspective that helps bridge two seemingly

distant theoretical traditions. Organizational literature has traditionally examined these interdependencies through the lens of tensions and drifts, often emphasizing structural separation as a means to mitigate conflicts between competing logics (Battilana & Dorado, 2010; Jay, 2013; Pache & Santos, 2013). In contrast, strategy literature has largely focused on how firms can align competitive advantage and sustainability initiatives, either through efficiency-enhancing mechanisms or premium-pricing effects (Burbano, 2016; Flammer, 2015a; Fosfuri et al., 2015; Seo et al., 2021). Our study provides a unifying perspective by demonstrating that firms can institutionalize managerial structures that actively transform interdependencies into synergies. Specifically, rather than treating sustainability and competitive goals as inherently conflicting, our findings suggest that the presence of a CSO enables firms to strategically leverage sustainability investments as a tool for efficiency and value creation.

THEORY

Literature

Interdependencies between business and social actions

One of the fundamental tenets of strategy and organization literature is the interdependence between a company's social and business actions. Organizational literature has traditionally framed these interdependencies as arenas of tension, emphasizing the inherent conflicts between competing institutional logics. These tensions arise from the struggle for dominance between social and economic objectives, which can lead to instability in firms that pursue dual missions (Battilana & Dorado, 2010). Scholars

have extensively examined the challenges associated with managing these tensions, highlighting the internal complexities firms face in balancing sustainability and profitability (Jay, 2013; Pache & Santos, 2013).

A key insight from this literature is that when one logic prevails over the other, organizations risk either experiencing mission drift—where social objectives are compromised in favor of financial goals—or becoming financially unsustainable due to an overemphasis on social initiatives (Battilana & Dorado, 2010; Tracey & Jarvis, 2006). For example, Battilana et al. (2015) show that in work integration social enterprises, excessive prioritization of the social mission can paradoxically weaken social performance by undermining economic productivity. To address these tensions, research has suggested various organizational solutions, including structural separation of tasks into distinct divisions (Battilana & Dorado, 2010), the creation of internal integration spaces to facilitate coordination (Battilana et al., 2015), and the implementation of performance management systems to balance competing objectives (Jay, 2013; Santos et al., 2015).

In contrast, the strategy literature has taken a complementary perspective, focusing on how firms can create synergies from the interdependencies between sustainability and business actions. A central theme in this research is the strategic integration of sustainable actions, with scholars investigating the mechanisms through which sustainable investments can generate competitive advantage (Porter & Kramer, 2011; McGahan, 2022). The economic impact of these investments is typically conceptualized in two ways. First, sustainability initiatives can preserve economic value by mitigating risks and enhancing corporate resilience (Godfrey, 2005; Godfrey et al.,

2009). Under this perspective, which aligns with mainstream stakeholder theory, firms are encouraged to coordinate stakeholder actions to maximize economic value, as stakeholder behaviors directly influence corporate outcomes (Jones, 1995). Sustainability initiatives help reduce transaction costs among stakeholders with conflicting interests thanks to a trust mechanism, and serve as a form of reputational insurance, shielding firms from negative external events (Godfrey et al., 2009; Gardberg & Fombrun, 2006).

Second, a growing stream of research takes a micro-level perspective, emphasizing how interdependencies between sustainability and economic objectives reinforce each other synergistically (Fosfuri et al., 2016). This perspective introduces the concept of reciprocity (McWilliams & Siegel, 2001; Fosfuri et al., 2016) or reciprocation (Vishwanathan et al., 2020) as a fundamental mechanism of value creation. Sustainability initiatives enhance identity salience, organizational commitment, and employees' sense of belonging, particularly when the firm plays an active role in shaping its surrounding community (Fosfuri et al., 2011, 2015; Brown & Dacin, 1997; Porter & Kramer, 2006, 2011; Flammer, 2015b). For instance, research shows that sustainability initiatives can enhance employee productivity (De Roeck et al., 2016; Burbano, 2016), foster greater organizational commitment (Bode et al., 2015; Hansen et al., 2011), and even reduce knowledge leaks, thereby protecting internal innovation (Flammer & Kacperczyk, 2019). Additionally, these initiatives can directly influence consumer behavior, as customers tend to derive greater satisfaction from purchasing products or services from socially responsible firms. This, in turn, increases purchasing intentions (Sen et al., 2006), strengthens willingness to pay premium prices for sustainable products (Homburg et al., 2005; Marín et al., 2012), and leads to cost-efficient reforms in key company investments

(Seo et al., 2021).

Taken together, these insights underscore the complexity of managing the interdependence between social and business actions within an organization (Kaplan, 2008; 2022). Organizational theory conceptualizes firms as systems of coordinated tasks, structured through information processing activities that facilitate decision-making and communication (Galbraith, 1973; March, 1991). When tasks are interdependent, they introduce a critical organizational challenge, as they can either lead to inefficiencies or generate reinforcing synergies—representing a key locus of opportunity costs—depending on how they are managed. Effectively addressing these interdependencies requires formalized organizational architecture (Puranam et al., 2012) that optimizes coordination mechanisms (Zhou, 2011). Firms can accomplish this by implementing incentive structures, designing sequential decision-making processes, or appointing dedicated managerial roles with the authority to align interdependent activities efficiently. In this respect, the CSO emerges as a key organizational figure capable of managing the inherent interdependencies between sustainability and competitive investments.

The dual role of CSOs

Our assumption is that the CSO, by occupying a designated hierarchical position with both decision-making authority and coordination responsibilities over interdependencies, plays a critical role in ensuring that sustainability efforts are not managed in isolation but are instead integrated into the firm's broader resource allocation and competitive

decision-making processes. However, the existing literature only partially confirms this dual role, as it remains highly concentrated on the CSO's impact on sustainability outcomes, while largely overlooking their influence on broader business strategy and financial decision-making.

A growing body of literature has indeed examined the impact of CSOs on firms' sustainability outcomes, emphasizing their role in signaling managerial attention to sustainability and integrating environmental and social objectives into corporate strategy. Drawing on upper echelon theory (Hambrick & Mason, 1984) and the attention-based view (Ocasio, 1997), scholars argue that CSOs function as institutional champions, dedicating resources and expertise to sustainability efforts (Fu et al., 2020; Kanashiro & Rivera, 2019; Korendijk & Drogendijk, 2024). Empirical research supports this view, showing that firms with CSOs are more likely to be included in sustainability indices (Strand, 2013), achieve higher ESG performance (Fu et al., 2020; Korendijk & Drogendijk, 2024), and improve the credibility of sustainability disclosures (Peters & Romi, 2014, 2015; Thun & Zülch, 2023).

However, a CSO's function extends beyond sustainability advocacy, as this position is structurally embedded within the top management team, with potential implications for broader business operations and strategic investments. Yet, research on this dimension remains remarkably scarce. To our knowledge, only one study explicitly examines the economic impact of CSOs. Wiengarten, Lo, and Lam (2017) using a sample of U.S. publicly listed firms (2004–2012), they find no direct relationship between CSO appointments and improved return on assets. Interestingly, their study highlights the moderating role of CSO characteristics, showing that firms experience higher ROA when

the newly appointed CSO is a woman or has a background in corporate social responsibility.

Corporate Philanthropy: A Baseline for evaluating the strategic role of CSOs

While the CSO's role in managing interdependencies between sustainability and business objectives is broad (Eccles and Taylor 2023; Peters et al. 2019, Strand 2014; Velte and Stawinoga. 2020), we intentionally impose boundary conditions that narrow the scope of our theorizing, as a means to formulate more precise causal mechanisms. This approach inevitably restricts the generalization of our theorizing, but we gain greater analytical precision in understanding how synergies may come into play.

Granted, we focus on philanthropic donations as a baseline construct for two key reasons. First, most corporate giving programs or philanthropic initiatives are managed through corporate foundations, which operate as separate legal entities with independent governance structures (Minefee et al., 2015). These distinct governance mechanisms and the clear separation of responsibilities between corporate foundations and CSOs help in introducing a fair grade of independence that are instrumental to better isolate the mechanisms through which CSOs influence corporate investments. Second, corporate philanthropy has long been recognized as a critical dimension of corporate social responsibility and is widely used as a proxy for corporate social activity in academic research (Carroll, 1979, 1991; Choi et al., 2023; Mescon & Tilson, 1987; Godfrey, 2005; Peloza, 2009; Wood, 2010). Prior studies suggest that corporate philanthropic donations enhance firms' social legitimacy and reputation, as stakeholders perceive donor firms as

more socially responsible. For example, corporate giving has been linked to positive employee perceptions of sustainability efforts (Block et al., 2017; Gautier & Pache, 2015; Raub, 2018) and increased customer trust and engagement (Lev, Petrovits, & Radhakrishnan, 2010).

Beyond its social function, corporate philanthropy also influences firm economic outcomes (Gautier & Pache, 2015; Godfrey, 2005; Porter & Kramer, 2002), both directly and indirectly. For the latter, the nonmarket strategy and political economy literature suggests that corporate philanthropy plays a crucial role in shaping firms' nonmarket environments, particularly by fostering relationships with political actors and nonprofit organizations (Bertrand et al., 2020; Bertrand et al., 2021; Gatignon, Gama, & DeMello, 2023; Walker & Rea, 2014; Wang & Qian, 2011). Firms engaging in philanthropic donations often gain sociopolitical legitimacy and regulatory goodwill, which can translate into government contracts, subsidies, and greater influence over legislative processes. Furthermore, corporate donations can facilitate access to political networks, enabling firms to better anticipate and mitigate risks stemming from policy shifts or regulatory uncertainties (Walker & Rea, 2014). Empirical studies illustrate how firms strategically increase charitable donations in response to social and political pressures, such as protests and boycotts (McDonnell & King, 2013; Ingram, Yue, & Rao, 2010). Additionally, firms have been found to allocate philanthropic donations strategically to nonprofit organizations in congressional districts where legislators have personal ties to donor firms (Bertrand et al., 2020). Direct economic benefits of corporate philanthropy are well documented. For instance, Wang and Qian (2011) and Seo et al. (2021) found a positive association between corporate philanthropy and return on assets.

Hypotheses

We draw from upper echelons theory (Hambrick & Mason, 1984; Carpenter et al., 2004) and, more specifically, from the research substream examining the role of functional top management team (TMT) members (Menz, 2012) to develop our hypotheses. A core tenet of upper echelons theory is that a firm's strategic decisions reflect the interpretations and attentional focus of its top executives. Because these managers operate under conditions of information overload, incomplete data, and competing organizational goals, their decisions are shaped by their cognitive bases and values (Hambrick & Mason, 1984; Carpenter et al., 2004; Hambrick, 2007).

Moreover, upper echelons theory posits that firm decisions are not solely driven by the CEO, but rather emerge from the collective cognitions, capabilities, and interactions of TMT members, who often hold competing objectives. This has led to a growing body of research on how the composition of the TMT influences firm decisions and outcomes, particularly through the appointment of functional executives—TMT members responsible for specific functional areas. Prior studies show that such appointments shape managerial attention and resource allocation by empowering these executives to drive firm-level priorities, as seen in research on Chief Marketing Officers (Nath & Mahajan, 2011), Chief Strategy Officers (Menz & Scheef, 2014), and more recently, Chief Sustainability Officers (CSOs) (Fu et al., 2018; Strand, 2013; 2014). Further, granting formal structural power to functional executives influences TMT interactions, thereby affecting firm strategic decisions (Finkelstein, 1992; Menz, 2012).

The creation of the CSO role within the TMT assigns formal responsibility for the

firm's sustainability strategy, providing the CSO with both decision-making authority and coordination capabilities across other TMT members (Fu et al., 2020; Peters et al., 2019; Miller & Serafeim, 2014; Strand, 2014). Crucially, the CSO operates at the intersection of business and sustainability, managing interdependencies that could generate either synergies or inefficiencies. In firms without a CSO, these interdependencies are often dispersed across different TMT members, leading to fragmented knowledge, misaligned incentives, and disconnected information flows (Peters et al., 2019; Waldman et al., 2006). By contrast, the CSO consolidates sustainability-related information and reduces biases in decision-making processes, while also being tasked with incentive structures explicitly designed to manage interdependencies—something far more difficult when sustainability responsibilities are scattered across multiple TMT members. Moreover, firms with a CSO benefit from a formalized authority within the organization, ensuring a clearer alignment between business and sustainability objectives compared to firms without a CSO.

Given that organizational resources are limited and sustainability investments are inherently costly, CSOs have strong incentives to identify interdependencies that generate efficiency gains or sales advantages (Kaplan, 2023). Firms may respond to external sustainability pressures in various ways (Kaul & Luo, 2018; Pache & Santos, 2010; McGahan, 2021). If they have already allocated resources to meet stakeholder expectations through a particular channel, additional investments in alternative channels may be unnecessary or inefficient. For instance, firms can address stakeholder concerns by investing in corporate internal sustainability initiatives, such as marketing campaigns supporting social causes, developing renewable energy infrastructure, adopting sustainable product packaging, or implementing recycling technologies to minimize

water and material waste. Alternatively, firms may engage in corporate philanthropy, supporting social causes through charitable donations (Luo, Kaul, & Seo, 2018; Seo, Luo, & Kaul, 2021), which can generate similar stakeholder responses as corporate investments.

As previously noted, corporate philanthropic donations are typically managed by the firm's foundation and operate independently of TMT's direct oversight. Consequently, CSOs take these donations as given when formulating corporate sustainability strategies. Corporate philanthropy can serve as a stakeholder appeasement mechanism, allowing firms to accumulate reputational capital and be perceived as more socially responsible (Luo, Kaul, & Seo, 2018). This moral reputation functions as a form of insurance, shielding firms from regulatory scrutiny and mitigating reputational risks (Godfrey, Craig, & Hansen, 2009), while also fostering goodwill within and outside the company. If a CSO determines that the firm is already addressing optimally stakeholder expectations for sustainability through philanthropy, they may advocate for reducing corporate investments in other areas that serve the same stakeholder purpose, particularly those that do not generate additional returns from stakeholders. This is especially relevant is duplication of effort arises due to a lack of strategic coordination (Puranam et al., 2012).

Thus, our theoretical mechanism relies on the assumption that firms optimize their response to stakeholder pressures and can use different channels to satisfy these pressures. This effort can take the form of philanthropic donations or strategic sustainability investments, both of which serve to enhance a firm's legitimacy and address societal expectations. However, the key issue is not that these two forms of investment act purely as substitutes, but rather that they are independent decisions within the firm, which can

lead to overinvestment and inefficiencies if not properly coordinated.

To conceptualize the relationship between philanthropic donations and strategic investments in responding to stakeholder pressure, we consider the response function:

$$R = P + SI + ß\ x\ PxSI$$

where R represents the firm's total response to stakeholder pressure, P denotes philanthropic donations, SI represents strategic investments, and β captures the degree of complementarity or substitution between the two actions. Firms seek to achieve an optimal level of response, R^*, where they efficiently address stakeholder expectations without overcommitting resources. However, because philanthropic donations and strategic investments are often allocated through separate decision-making processes, there is a risk that firms exceed this optimal threshold, leading to redundancy ($R > R^*$). This redundancy is particularly likely when $\beta > 0$, meaning that philanthropic donations and strategic investments are complementary rather than purely substitutive. In such cases, complementarities reinforce the probability of resource misallocation because both channels mutually enhance their effectiveness in responding to stakeholders. Without explicit coordination, firms may inadvertently overcommit resources, allocating more to both philanthropic donations and strategic investments than is necessary. This results in inefficiencies, as firms exceed the optimal level of stakeholder engagement, thereby incurring avoidable costs without proportionate benefits.

Thus, the role of the CSO becomes particularly relevant. With their formal authority over sustainability strategy and coordination role within the firm, CSOs are uniquely positioned to manage these trade-offs, ensuring that corporate sustainability

investments align with philanthropic contributions, rather than leading to duplication or inefficiencies. For instance, Seo et al. (2021) provide empirical evidence that philanthropic donations can substitute for advertising expenditures.

A real-world example could be the following. A semiconductor company has made substantial R&D investments in AI-driven water preservation, particularly in developing machine learning algorithms that optimize water usage and minimize wastewater production—a crucial materiality and regulatory challenge in the industry. Concurrently, through its corporate foundation, the firm has made large philanthropic donations to NGOs focused on rainforest preservation and ocean clean-up efforts. How might a CSO identify complementarities in this case that justify reducing redundant R&D spending? First, NGOs engaged in water conservation efforts provide real-world datasets and field experiments that directly enhance the firm's AI models; This improves AI predictive accuracy without requiring additional internal R&D expenditures. Second, by aligning with NGOs working on water sustainability, the company strengthens its legitimacy, reducing regulatory scrutiny and increasing stakeholder trust, determining that additional R&D investment in water-related AI compliance is unnecessary. Third, the firm's philanthropic engagement with sustainability-focused NGOs enhances its employer brand among AI engineers committed to social impact, so that especially recent graduates passionate about sustainability are willing to join the firm's R&D team substituting current employed inventors at lower salaries. Accordingly, we hypothesize:

Hypothesis 1 (H1): *The negative relationship between corporate philanthropic donations and the firm's strategic investments is stronger when a CSO is present in the corporation.*

Authority and power are necessary conditions for influencing corporate decision-making, but they are not sufficient on their own. Not all CSOs will perceive or act upon the interdependencies between philanthropic donations and strategic investments in the same way. We propose that the ability of CSOs to cut strategic investments will be stronger when CSOs possess a particular background that equips them with both the cognitive capacity to identify synergies and the persuasive ability to secure internal organizational buy-in.

Prior research has established that some executives wield greater influence than others (Hambrick, 2007) and that those who possess both formal and informal authority are more effective in shaping organizational outcomes (Walls & Berrone, 2017). The need for both formal and informal authority is particularly relevant for TMT members in newly established roles, such as the CSO, whose legitimacy within the organization may still be evolving (Menz, 2012; Peters et al., 2019; Strand, 2014). While formal authority is granted upon appointment to an executive position, informal authority is earned through knowledge, expertise, and a demonstrated track record of effectiveness (Walls & Berrone, 2017; Peters et al., 2019). Accordingly, career experience should significantly shape a manager's ability to influence firm decisions. Career backgrounds act as cognitive filters, shaping how executives interpret contextual information (Hambrick & Mason, 1984; Carpenter et al., 2004). Managers with domain-specific expertise are not only more capable of developing successful strategies (Lounsbury, 2001) but also more effective at persuading internal stakeholders to adopt their initiatives (Peters et al., 2019; Kotter, 1990).

The key question is: What kind of experience is necessary to recognize potential

synergies in interdependent sustainability-business actions and to craft a compelling narrative that strengthens informal authority in a formal position such as CSO? Existing research has focused on the role of prior sustainability expertise in shaping sustainability outcomes, finding that CSOs with prior sustainability experience can improve sustainability performance in certain conditions (Peters & Romi, 2015; Peters et al., 2019). However, understanding how philanthropic donations engage stakeholders is only one piece of the equation. Equally important is experience in understanding the business advantages that sustainability actions—such as corporate philanthropy—can generate. Thus, an essential capability for CSOs is the ability to identify and effectively communicate the economic benefits of corporate philanthropy, positioning it as a strategic rather than purely altruistic tool.

A perfect profile for this role is one that has firsthand exposure to how philanthropic donations can activate advocacy for firms, creating a more lenient regulatory environment, enhancing firm compliance perceptions, and generating goodwill that translates into tangible economic benefits. CSOs with government experience are particularly well-positioned to articulate these mechanisms (Goldman et al., 2008; Hillman, 2005). They possess specialized insights into the political and regulatory processes that shape how corporate philanthropy generates economic benefits for firms. Their expertise spans three critical areas: they understand how philanthropic activities influence regulatory agencies and reduce compliance burdens (Bertrand et al., 2021); they recognize how philanthropy can create strategic advantages, such as securing government contracts or obtaining favorable legislation (Goldman et al., 2008); they saw how communities, customer groups, and activists, react to corporate donations and

sustainability investments (Godfrey et al. 2009; Madsen and Rogers 2015; Luo et al. 2018).

CSOs without a government background are less likely to possess this heterogeneous yet specialized knowledge, making them less effective at leveraging philanthropic commitments as a strategic substitute for other corporate internal investments. In contrast, CSOs with government experience are better positioned to integrate nonmarket considerations into corporate decision-making, allowing them to frame philanthropic giving as a dual-purpose mechanism that advances both sustainability objectives and business imperatives while minimizing redundant investments. Accordingly, we hypothesize:

Hypothesis 2 (H2): *The negative relationship between philanthropic donations and the firm's strategic investments is stronger when the CSO has a government background experience.*

METHODS

Data and Sample

Our sample consists of the publicly listed corporations that appeared in the Fortune 100 list in 2021 (95 companies). Since the 2021 Fortune 100 list is based on firms' annual revenues from 2020, we collected data on these corporations for the period 2005–2020. Specifically, we hand-collected information on the CSOs from multiple sources. First, we relied on *BoardEx* to determine the presence of a CSO and the name of a CSO in each firm and each year. Consistent with previous practice, we identified those senior

managers with job titles including key words such as “sustainability,” “social responsibility,” “environment,” or “ESG” as CSOs (e.g., Fu et al., 2019; Gupta et al., 2021). In this study, we define senior leaders as non-CEO executives who play a key role in an organization’s strategic decision-making process. Following prior research (Finkelstein et al., 2009), this includes individuals holding positions at the Vice President (VP) level or above, as well as all executives with “Chief” in their title. Accordingly, our analysis focuses only on positions at the VP level or higher. Common CSO job titles in our sample include “SVP Global Sustainability”, “VP/Head of Sustainability”, “Chief Corporate Social Responsibility Officer”, and “Global Head of ESG”.

Second, we collected CSOs’ demographic attributes (e.g., gender), educational background (e.g., educational level and type of education such as MBA or legal degree), and career history information (e.g., the function of each job and the name of each organization) from LinkedIn, corporate websites, university webpages about notable alumni, and interviews about the executives covered by business press.

Data on companies’ philanthropic donations were obtained from Candid’s Foundation Directory, a non-profit that provides data on the social sector. We restricted the amount of donations to no less than 2,000 dollars and we also excluded donations that were made by a company instead of a company foundation (99% of the donations in our sample were made by corporate foundations), leading to a total of 508,624 unique donations across 18 different cause areas. Given that our study is primarily focused on the philanthropic donations managed by corporate foundations, we remove 13 firms that donate but without a corporate foundation. Data on firms’ financial and accounting information were obtained from Compustat. We excluded 2 additional companies that

missed financial and accounting data. Our final sample for primary analyses consists of 1233 firm-year matched observations across 80 unique Fortune 100 firms.

Dependent variables

Our main dependent variable *Strategic investment* is measured as the sum of investments in R&D and in Advertising. We create a variable called *R&D investments* which captures the total amount of expenditures on R&D (in millions of dollars) for a firm *i* in year *t* as reflected in the variable "xrd" from the Compustat database. *Advertising investments* is a variable that captures investments in advertising (in millions of dollars) using the total amount of expenditures on advertising for a firm *i* in year *t* from as reflected in the variable "xad" from the Compustat database. The units for these variables are measured in millions of dollars. Note that we coded missing R&D and advertising expenditures as zero, but we included corresponding dummy variables that took the value of one where measures of R&D and advertising expenditures were missing in Compustat. We winsorized our dependent variables at the top and bottom 1% percentile to mitigate concerns for extreme outliers. Using the raw data without winsorization produces similar results (results are reported in Appendix Table A).

Independent variables

We measure *CSO presence* with a dichotomous variable that takes the value of 1 if the focal firm i has a CSO position year t, and 0 otherwise.

Then, we classify CSOs as having government experience if they previously held positions within government agencies, departments, or ministries. This classification includes, but is not limited to, roles in organizations such as the Environmental Protection Agency, Department of Energy, Department of Veterans Affairs, Department of Commerce, and the Federal Energy Regulatory Commission, among others. We consider the experience of the executives before entering their current CSO role and we created a dichotomous variable *Government CSO* that takes the value of 1 if the CSO has prior employment in government experience in a given year and 0 otherwise.

Philanthropic Donation is measured as the total amount of grant donated by the firm's foundation and it is log transformed given its skewness. The average donation in our sample is 23.2 million dollars (minimum value = 0, maximum value = 1120.5 million dollars), and the donation amounts vary significantly across firms (standard deviation = 74.1 million dollars). 33.8% of firm-year observations report no philanthropic donations.

Control variables

We also control for several variables to rule out alternative explanations that might correlate with our independent variable as well as with the dependent variables and to increase the precision of our estimation. At the firm level, we accounted for a series of performance indicators that reflect firms' financial health, including *ROA* (measured as the ratio of net income divided by the book value of total assets in prior year), *financial slack* (measured as the ratio of cash divided by the book value of total assets in prior year), *capital intensity* (measured as the amount of capital expenditure divided by the

book value of total assets in prior year), *leverage* (the sum of long-term and short-term debts and divided by the total assets in prior year), *firm size* (measured as the logged value of book value of total assets in prior year), *employee* (measured as the logged value of total number of employees). We also controlled for *materiality pressure*, which is calculated as "(Business segment sales/Total sales) × Number of materiality categories".

To construct this measurement, we followed a two-step process. First, we identified the business or operational segments and obtained the corresponding SIC code for each firm in a given year from the Segment dataset in Compustat, along with the sales figures for each segment. Second, we utilized the Sustainability Accounting Standards Board (SASB) data to determine which sustainability disclosure topics in our dataset are material for each industry. Specifically, two of the authors independently matched 77 SASB industries with the corresponding segment SIC codes and subsequently collaborated to resolve any discrepancies. We then matched the number of materiality categories for each SASB industry in our dataset. Finally, we calculated the materiality pressure weighted by sales. In some cases, firms make donations both through their corporate foundations and directly from the companies themselves, we also controlled for *corporate giving*, which is a dummy variable and coded as 1 if the focal firm undertake philanthropic donations by firm itself. At the board level, we included a dummy variable *sustainability committee*, which is coded as 1 if the focal firm has any sustainability or CSR-related committee in each year, and 0 otherwise, because prior literature has shown that sustainability committee may partially substitute the role of CSOs on firm's strategic decisions (Dixon-Fowler et al., 2017; Korendijk & Drogendijk, 2024). We identified the names of all board committees of a firm in the BoardEx dataset. Consistent with previous studies

(Dixon-Fowler et al., 2017; Fu et al., 2020), we categorized sustainability committees with keywords “sustainability”, “responsibility”, “environment”, “public policy”, “ethics” in their names into *sustainability committee*. We controlled for several CEO-level characteristics such as *CEO career horizon* (coded as 1 if the CEO is more than 60-year-old and 0 otherwise), *CEO-chairman duality* (coded as 1 if the CEO is also the chairman of the board and 0 otherwise) and *CEO bonus ratio* (measured as the logged value of a CEO’s bonus-to-total compensation ratio) (Cheng, 2004; Currim, Lim & Kim, 2012; Heyden, Reimer, & van Doorn, 2017). We also included *VP CSO* in all models to account for the variation of managerial formal power that influence firm strategic decisions. VP CSO takes the value of 1 if the focal CSO has generalist VP titles or above (e.g., Executive VP and Senior VP) and is coded as 0 if the CSO has lower positional power or has specialist VP titles.

Estimation strategy

To test our hypotheses, we employ ordinary least squares (OLS) panel regressions with firm fixed effects to account for time-invariant omitted variables at the firm level and year fixed effects to control for macroeconomic trends and business cycles. To mitigate concerns of reverse causality, we lag our independent variables by one year. Additionally, we cluster standard errors at the firm level across all regression models to account for potential within-firm correlation over time.

While our regression model includes a broad set of time-variant firm characteristics and firm fixed effects, there may still be unobserved time-variant factors

influencing both the presence of a CSO in the TMT and the relationship between philanthropic donations and strategic investments—such as an underlying corporate strategy that simultaneously shapes both organizational structure and resource allocation choices. Given these limitations, we adopt a conservative approach in interpreting our results, acknowledging that our primary objective is not to disentangle the co-evolutionary dynamics between strategy and organizational structure, but rather to provide empirical evidence on the overlooked business impact of a CSO within an organization.

RESULTS

Table 1 displays the means, standard deviations, and first-order correlation of the key variables used in this paper. Approximately 30% of our firm-year observations have a CSO, corresponding to 46 unique firms that had a CSO at some point during our sample period. CSOs with prior working experience in the government account for 7.7% of our total number of firm-year observations, which corresponds to 19 distinct companies.

Before proceeding with the regression analysis, it is important to gain a deeper understanding of the demographic characteristics, educational background, and career trajectories of the CSOs in our sample. To do so, we conducted a descriptive analysis to examine key attributes of CSOs as presented in Table 2. 59.1 % of the CSOs in our sample are female. Regarding CSOs' educational background, 19% of CSOs have an MBA degree and 23.5% of them have obtained a legal degree. On average, CSOs have spent roughly 16 years within the same organization, suggesting that CSOs are quite

familiar with the business operations in their firms, and that they tend to be internally promoted to their current roles. In fact, only 36.3% of the CSOs are hired directly from outside the firm. Moreover, nearly 70% of the CSOs spent the majority of their tenure in the organization working in support functions, such as human resource management and public relations. In addition, CSOs have an average tenure at their current CSO role in the organization of 4.6 years. In addition, approximately 31% of CSOs have prior employment history in social and environmental areas. Finally, in this subsample, 28.1% of CSOs have prior employment history in government, and the majority of them (78%) have worked for or volunteered for NGOs at some point in their career.

[Insert Table 1 and 2 here]

Before testing the role of CSOs in the relationship between philanthropic donations and strategic investments, we first examine our key assumption that philanthropic donations are set independently by the foundation of the organization and therefore, the CSO take them as given when trying to align social and business goals. We do this in two different ways. First, we employed a panel logit model with firm fixed effects to examine whether the presence of a CSO or a government CSO is influenced by the amount of philanthropic donations. The results do not show evidence of such an effect (Appendix Table B). Second, we explore whether philanthropic donation activity made by the changes upon the arrival of a new CSO. In particular, we explore whether the amount of philanthropic donations, the cause areas of donations, and whether there are new recipients or new cause areas of donations change when a new CSO is appointed (Appendix Table C). We control for *ROA*, *firm size*, *employee*, *financial slack*, *leverage*, *corporate giving*, *materiality pressure*, *number of Fortune 500* firms headquartered in the

same state, *CEO-chairman duality*, *CEO career horizon*, *CEO bonus ratio*, *board size*, whether there is a sustainability committee, and number of women on the board in these regression analyses. We do not find a significant relationship between the appointment of a new CSO and changes in donations, donation causes, or the number of recipients. Furthermore, we fail to find a statistically significant relationship between the appointment of a new CSO and any increase in new recipients or new donation causes. These findings are in line with our main assumption of a scarce correlation between CSO presence and philanthropic donations.

Hypothesis 1 proposes that there is a negative association between philanthropic donations and strategic investments when there is a CSO in the firm. In the untabulated baseline model without interaction term between CSO presence and donation, we didn't find evidence indicating a statistically significant correlation between a firm's philanthropic donation and its strategic investments (β = -50.716; p = 0.423). Model 1 of Table 3 shows that 1% increase in philanthropic donations is associated with approximately 2.7 million dollars decrease in strategic investments as measured by the total expenditures on R&D and marketing activities when the firm has a CSO (β = -271.626; p = 0.029), suggesting that there is a negative relationship between corporate philanthropy and strategic investment when there is a CSO. Our hypothesis 1 is thus supported. Models 2 and 3 of Table 3 estimate the main model but looking at R&D investment and advertising separately. Model 2 shows that philanthropic donations are more negatively associated with a reduction in R&D investments when there is a CSO in the company than when there is not (β = -246.437; p = 0.012). However, the significance of the interaction effect for advertising expenditures is reduced drastically (β = -43.306; p

= 0.273). These findings suggest that results are mainly driven by cost saving approach toward R&D.

Model 4 in Table 3 tests our Hypothesis 2, which underscores the important role of CSOs' prior employment history in government in the relationship between corporate philanthropy and strategic investments. Results from model 4 show that a 1% increase in donations is associated with approximately 4.7 million dollars decrease in strategic investments (β = -469.735, p = 0.058) when there is a government CSO. This is consistent with our H2. We also find that *Government CSO × Donations* is negatively associated with both R&D investments (β = -310.760, p = 0.072) and advertising investments (β = -158.975, p = 0.072). Figures 1 and 2 plot the marginal effect interactions and show that the substitution effects between firm strategic investments and corporate philanthropy happens when the firm has a CSO, more so for CSOs with a government background. So, we find that the effect on strategic investment is bigger and broader when the CSO has a government background.

Supplementary Analysis

Robustness tests. We conduct several additional analyses to investigate the robustness of our results. First, we include additional control variables on CSOs' demographic backgrounds, including their gender, origin (i.e., external hired versus internal appointed), prior working experience in sustainability issues and firm's core functional departments (e.g., production and operation; marketing and sales), affiliated NGO experience. Models 1-3 of Table 4 show continued support for our hypothesis 1 and 2, suggesting that it is not

differences in other aspects of the government CSOs that drive our results. Since not all companies in our sample appointed a CSO during the sample period, we conducted a subsample analysis and restricted our focus to companies that had appointed CSOs. As demonstrated in Table 5, the results remained substantially unchanged. In addition, instead of using OLS panel linear regressions with firm fixed effects, we use models with firm random effects, including also year fixed effects and industry fixed effects (3-digit SIC code). We continue to find consistent results with those in Table 3.

[Insert Table 3, Table 4, Table 5, and Table 6 here]

Exploration of alternative backgrounds. To provide further evidence that having CSOs with authority and knowledge about the economic benefits of philanthropic donations matters for transforming interdependencies into synergies, we estimate alternative models exploring the interaction of donations with different CSO backgrounds. Specifically, we explore the effects of two alternative backgrounds, one that relates to experience in the social impact of donations, and one that relates to experience with the impact of competitive investments. In particular, we estimate the model including the interaction terms "*Government CSO* × *Donation*" and " *CSO's functional background* × *Donation*" in the same model, in which CSO's functional background is a binary variable and denotes for whether the CSO has prior career experience in core function (i.e., Marketing & Sales, Operations & Productions, R&D, and Finance), or has worked in sustainability or CSR areas. The results are presented in Table 7 and Table 8. Overall, we do not find evidence to support that a CSO's prior work experience—whether related to the social impact of donations or to competitive actions—plays a significant role in transforming interdependencies into synergies. Additionally, we included all interaction

terms ("*Government CSO* × *Donation*", "*Sustainability expertise* × *Donation*", and "*Core function* × *Donation*") in the same regression model, as shown in Table 8. In this analysis, we continue to observe that a CSO's background in government is more influential than other core functional backgrounds or experience relevant to sustainability in the substitution relationship between corporate philanthropy and strategic investment.

[Insert Table 7 and Table 8 here]

Post hoc exploration of mechanisms

We next explore some of the mechanism behind our hypothesis 2. There are two potential mechanisms through which government CSOs may make a difference in the substitution effect between corporate philanthropy and strategic investments: (1) Instrumentality mechanism: Government CSOs' political capabilities allow them to better manipulate external environment via lobbying activities; and (2) Legitimacy mechanism: Government CSOs enjoy higher legitimacy in organizations because of their structural power and expert power such that they are able to persuade the boardroom to cut strategic investments. If the instrumentality mechanism holds, we would expect that government CSOs are likely to be associated with companies' lobbying activities, relative to firms with non-government CSOs or without CSOs. To test such mechanism, we regressed lobbying expenditures and count number of lobbying issues on government CSOs respectively, and we fail to find any statistically significant association between government CSO and lobbying expenditures and number of lobbying areas (Appendix Table D). If the legitimacy mechanism holds, we need to distinguish between government

CSO and powerful CSO. We regressed strategic investment on both interaction terms *Government CSO* × *Donation* and *VP CSO* × *Donation*, our results continue to find it is those firms with a government CSO that cut more in strategic investments, suggesting that government CSOs enjoy higher legitimacy because of their unique human capital obtained from their working experience in government (Appendix Table E).

DISCUSSION

We examine the role of Chief Sustainability Officers (CSOs) in managing the interdependencies between sustainability and business investments, particularly focusing on the relationship between philanthropic donations and strategic investments in large U.S. corporations. While prior research has explored CSOs' contributions to sustainability performance, their impact on the alignment of social and business goals remains underexplored. Drawing on upper echelons theory and the sub-stream of research that has considered the role of functional executives in top management teams, we argue that CSOs act as key integrators, balancing sustainability initiatives with corporate strategic priorities.

Our empirical analysis is based on a dataset of Fortune 100 companies from 2005 to 2020, that contains information on CSO presence, philanthropic donations, and strategic investments in R&D and advertising. The results indicate that firms with a CSO exhibit a negative relationship between philanthropic donations and strategic investments, suggesting that CSOs help firms optimize resource allocation by reducing expenditures in R&D and advertising when philanthropic donations are present. Furthermore, this effect

is more pronounced when the CSO has a government background, indicating that prior public-sector experience enhances the CSO's ability to leverage philanthropy strategically to balance social and business objectives.

These findings contribute to the literature in several ways. First, they expand our understanding of how CSOs can play a fundamental role in aligning social and business goals, highlighting their influence on firms' broader strategic decisions and extending past research that focused mostly on their impact on social performance. Second, our findings provide empirical evidence that the presence of a CSO facilitates the alignment of sustainability investments with corporate strategy, potentially reducing inefficiencies associated with uncoordinated resource allocation. Finally, by identifying government experience as a key moderating factor, our study underscores the importance of career background in shaping CSOs' effectiveness in managing interdependencies between philanthropy and competitive investments.

Our results also have implications for practice. Our findings suggest that firms seeking to integrate sustainability into their corporate strategy should consider not only appointing a CSO but also selecting individuals with experience in navigating regulatory and policy environments. Policymakers and stakeholders should recognize the strategic role of CSOs in ensuring that corporate philanthropy is not merely an act of goodwill but a tool that, when effectively managed, enhances both sustainability and business outcomes.

By shedding light on the strategic role of CSOs, this study emphasizes the need for a more integrated approach to sustainability leadership—one that acknowledges the

dual function of CSOs in fostering corporate responsibility while optimizing business performance.

REFERENCES

Aguilera, R. V., Aragón-Correa, J. A., Marano, V., & Tashman, P. A. (2021). The corporate governance of environmental sustainability: A review and proposal for more integrated research. *Journal of Management*, *47*(6), 1468-1497.

Battilana, J., & Dorado, S. (2010). Building sustainable hybrid organizations: The case of commercial microfinance organizations. *Academy of Management Journal*, *53*(6), 1419-1440.

Battilana, J., Sengul, M., Pache, A. C., & Model, J. (2015). Harnessing productive tensions in hybrid organizations: The case of work integration social enterprises. *Academy of Management Journal*, *58*(6), 1658-1685.

Bertrand, M., Bombardini, M., Fisman, R., Hackinen, B., & Trebbi, F. (2021). Hall of mirrors: Corporate philanthropy and strategic advocacy. *The Quarterly Journal of Economics*, 136(4), 2413-2465.

Bertrand, M., Bombardini, M., Fisman, R., & Trebbi, F. (2020). Tax-exempt lobbying: Corporate philanthropy as a tool for political influence. *American Economic Review*, *110*(7), 2065-2102.

Block, E. S., Glavas, A., Mannor, M. J., & Erskine, L. (2017). Business for good? An investigation into the strategies firms use to maximize the impact of financial corporate philanthropy on employee attitudes. *Journal of Business Ethics*, 146, 167-183.

Bode, C., Singh, J., & Rogan, M. (2015). Corporate social initiatives and employee retention. *Organization Science*, *26*(6), 1702-1720.

Brown, T. J., & Dacin, P. A. (1997). The company and the product: Corporate associations and consumer product responses. *Journal of Marketing*, *61*(1), 68-84.

Burbano, V. C. (2016). Social responsibility messages and worker wage requirements: Field experimental evidence from online labor marketplaces. *Organization Science*, *27*(4), 1010-1028.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, *30*(6), 749-778.

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of Management Review*, 4(4), 497-505.

Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, 34(4), 39-48.

Cheng, S. (2004). R&D expenditures and CEO compensation. *The Accounting Review*, 79(2), 305-328.

Choi, S., Park, R. J., & Xu, S. (2023). The strategic use of corporate philanthropy: Evidence from bank donations. *Review of Finance*, 27(5), 1883-1930.

Currim, I. S., Lim, J., & Kim, J. W. (2012). You get what you pay for: the effect of top executives' compensation on advertising and R&D spending decisions and stock market return. *Journal of Marketing*, 76(5), 33-48.

De Roeck, K., El Akremi, A., & Swaen, V. (2016). Consistency matters! How and when does corporate social responsibility affect employees' organizational identification?. *Journal of Management Studies*, *53*(7), 1141-1168.

Dixon-Fowler, H. R., Ellstrand, A. E., & Johnson, J. L. (2017). The role of board environmental committees in corporate environmental performance. *Journal of Business Ethics*, 140, 423-438.

Eccles, R. G., & Taylor, A. (2023). The evolving role of chief sustainability officers. *Harvard Business Review*.

Farri, E., Cervini, P., & Rosani, G. (2023). The 8 Responsibilities of Chief Sustainability Officers. *Harvard Business Review*. Retrieved from: https://hbr. org/2023/03/the-8-responsibilities-ofchief-sustainability-officers.

Flammer, C. (2015a). Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach. *Management Science*, *61*(11), 2549-2568.

Flammer, C. (2015b). Does product market competition foster corporate social responsibility? Evidence from trade liberalization. *Strategic Management Journal*, *36*(10), 1469-1485.

Flammer, C., & Kacperczyk, A. (2019). Corporate social responsibility as a defense against knowledge spillovers: Evidence from the inevitable disclosure doctrine. *Strategic Management Journal*, *40*(8), 1243-1267.

Finkelstein, S. (1992). Power in top management teams: Dimensions, measurement, and validation. *Academy of Management Journal*, *35*(3), 505-538.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic leadership: Theory and research on executives, top management teams, and boards*. Oxford University Press.

Fosfuri, A., Giarratana, M. S., & Roca, E. (2011). Community-focused strategies. *Strategic Organization*, *9*(3), 222-239.

Fosfuri, A., Giarratana, M. S., & Roca, E. (2015). Walking a slippery line: Investments in social values and product longevity. *Strategic Management Journal, 36*(11), 1750-1760.

Fosfuri, A., Giarratana, M. S., & Roca, E. (2016). Social business hybrids: Demand externalities, competitive advantage, and growth through diversification. *Organization Science, 27*(5), 1275-1289.

Fu, R., Tang, Y., & Chen, G. (2020). Chief sustainability officers and corporate social (Ir) responsibility. *Strategic Management Journal*, 41(4), 656-680.

Galbraith, J. (1973). Designing complex organizations. *Reading, Mass*.

Gatignon, A., Gama, M. A., & DeMello, R. B. (2023). The returns to nonmarket strategies during institutional transitions: Investor reactions to actor and tie characteristics. *Organization Science*, *34*(2), 916-934.

Gardberg, N. A., & Fombrun, C. J. (2006). Corporate citizenship: Creating intangible assets across institutional environments. *Academy of Management Review*, *31*(2), 329-346.

Gautier, A., & Pache, A. C. (2015). Research on corporate philanthropy: A review and assessment. *Journal of Business Ethics*, 126, 343-369.

Godfrey, P. C. (2005). The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review*, 30(4), 777-798.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal*, *30*(4), 425-445.

Goldman, E., Rocholl, J., & So, J. (2013). Politically connected boards of directors and the allocation of procurement contracts. *Review of Finance*, 17(5), 1617-1648.

Gupta, A., Fung, A., & Murphy, C. (2021). Out of character: CEO political ideology, peer influence, and adoption of CSR executive position by Fortune 500 firms. *Strategic Management Journal*, 42(3), 529-557.

Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, *32*(2), 334-343.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.

Hansen, S. D., Dunford, B. B., Boss, A. D., Boss, R. W., & Angermeier, I. (2011).

Corporate social responsibility and the benefits of employee trust: A cross-disciplinary perspective. *Journal of Business Ethics, 102*, 29-45.

Harris, I. C., & Ruefli, T. W. (2000). The strategy/structure debate: An examination of the performance implications. *Journal of Management Studies, 37*(4), 587-604.

Henry, L. A., Buyl, T., & Jansen, R. J. (2019). Leading corporate sustainability: The role of top management team composition for triple bottom line performance. *Business Strategy and the Environment, 28*(1), 173-184.

Heyden, M. L., Reimer, M., & Van Doorn, S. (2017). Innovating beyond the horizon: CEO career horizon, top management composition, and R&D intensity. *Human Resource Management, 56*(2), 205-224.

Hillman, A. J. (2005). Politicians on the board of directors: Do connections affect the bottom line?. *Journal of Management, 31*(3), 464-481.

Homburg, C., Koschate, N., & Hoyer, W. D. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of Marketing, 69*(2), 84-96.

Inc. Magazine. (2024 January 4). After 37 Years, Starbucks Announced a Brilliant New Rule That Customers Will Love. Retrieved from: https://www.inc.com/jason-aten/after-37-years-starbucks-announced-a-brilliant-new-rule-that-customers-will-love.html

Ingram, P., Yue, L. Q., & Rao, H. (2010). Trouble in store: Probes, protests, and store openings by Wal-Mart, 1998–2007. *American Journal of Sociology*, 116(1), 53-92.

Jay, J. (2013). Navigating paradox as a mechanism of change and innovation in hybrid organizations. *Academy of Management Journal, 56*(1), 137-159.

Jones, T. M. (1995). Instrumental stakeholder theory: A synthesis of ethics and economics. *Academy of Management Review, 20*(2), 404-437.

Kanashiro, P., & Rivera, J. (2019). Do chief sustainability officers make companies greener? The moderating role of regulatory pressures. *Journal of Business Ethics*, 155, 687-701.

Kaplan, S. (2008). Framing contests: Strategy making under uncertainty. *Organization Science, 19*(5), 729-752.

Kaplan, S. (2023). The promises and perils of corporate purpose. *Strategy Science, 8*(2), 288-301.

Kaul, A., & Luo, J. (2018). An economic case for CSR: The comparative efficiency of

for-profit firms in meeting consumer demand for social goods. *Strategic Management Journal*, *39*(6), 1650-1677.

Kiron, D., Kruschwitz, N., Haanaes, K., & von Streng Velken, I. (2012). Sustainability nears a tipping point. *MIT Sloan Management Review*, 53(2): 69-74.

Korendijk, M., & Drogendijk, R. (2024). Beyond the CSO: How Alternative Attention Carriers Influence the Role of CSOs on CSR. *Business & Society*, 00076503241271224.

Kotter JP (1990) *A Force for Change: How Leadership Differs from Management*. New York: Free Press

Lev, B., Petrovits, C., & Radhakrishnan, S. (2010). Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strategic Management Journal*, *31*(2), 182-200.

Lounsbury, M. (2001). Institutional sources of practice variation: Staffing college and university recycling programs. *Administrative Science Quarterly*, *46*(1), 29-56.

Luo, J., Kaul, A., & Seo, H. (2018). Winning us with trifles: Adverse selection in the use of philanthropy as insurance. *Strategic Management Journal*, *39*(10), 2591-2617.

Madsen, P. M., & Rodgers, Z. J. (2015). Looking good by doing good: The antecedents and consequences of stakeholder attention to corporate disaster relief. *Strategic Management Journal*, *36*(5), 776-794.

March, J. G. (1991). How decisions happen in organizations. *Human-computer Interaction*, *6*(2), 95-117.

Marín, L., Rubio, A., & de Maya, S. R. (2012). Competitiveness as a strategic outcome of corporate social responsibility. *Corporate Social Responsibility and Environmental Management*, *19*(6), 364-376.

McDonnell, M. H., & King, B. (2013). Keeping up appearances: Reputational threat and impression management after social movement boycotts. *Administrative Science Quarterly*, *58*(3), 387-419.

McGahan, A. M. (2021). Integrating insights from the resource-based view of the firm into the new stakeholder theory. *Journal of Management*, *47*(7), 1734-1756.

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, *26*(1), 117-127.

Menz, M. (2012). Functional top management team members: A review, synthesis, and research agenda. *Journal of Management*, 38(1), 45-80.

Menz, M., & Scheef, C. (2014). Chief strategy officers: Contingency analysis of their presence in top management teams. *Strategic Management Journal, 35*(3), 461-471.

Mescon, T. S., & Tilson, D. J. (1987). Corporate philanthropy: A strategic approach to the bottom-line. *California Management Review*, 29(2), 49-61.

Miller, K., & Serafeim, G. (2014). Chief sustainability officers: Who are they and what do they do? In R. Henderson, R. Gulati, & M. Tushman (Eds.), *Leading Sustainable Change*. Oxford: Oxford University Press.

Minefee, I., Neuman, E. J., Isserman, N., & Leblebici, H. (2015). Corporate foundations and their governance: Unexplored territory in the corporate social responsibility agenda. *Annals in Social Responsibility*, 1(1), 57-75.

Mintzberg, H. (1979). *The structuring of organizations*. Englewood Cliffs NJ: Prentice Hall.

Nath, P., & Mahajan, V. (2011). Marketing in the C-suite: a study of chief marketing officer power in firms' top management teams. *Journal of Marketing, 75*(1), 60-77.

Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal*, *18*(S1), 187-206.

Pache, A. C., & Santos, F. (2010). When worlds collide: The internal dynamics of organizational responses to conflicting institutional demands. *Academy of Management Review*, 35(3), 455-476.

Pache, A. C., & Santos, F. (2013). Inside the hybrid organization: Selective coupling as a response to competing institutional logics. *Academy of Management Journal*, *56*(4), 972-1001.

Peloza, J. (2009). The challenge of measuring financial impacts from investments in corporate social performance. *Journal of Management*, 35(6), 1518-1541.

Peters, G. F., & Romi, A. M. (2014). Does the voluntary adoption of corporate governance mechanisms improve environmental risk disclosures? Evidence from greenhouse gas emission accounting. *Journal of Business Ethics*, 125, 637-666.

Peters, G. F., & Romi, A. M. (2015). The association between sustainability governance characteristics and the assurance of corporate sustainability reports. *Auditing: A Journal of Practice & Theory*, 34(1), 163-198.

Peters, G. F., Romi, A. M., & Sanchez, J. M. (2019). The influence of corporate sustainability officers on performance. *Journal of Business Ethics*, 159, 1065-1087.

Porter, M. E., & Kramer, M. R. (2002). The competitive advantage of corporate

philanthropy. *Harvard Business Review*, 80(12), 56-68.

Porter, M. E., & Kramer, M. R. (2006). The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, *84*(12), 78-92.

Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review*, 89(1), 62-77.

Puranam, P., Raveendran, M., & Knudsen, T. (2012). Organization design: The epistemic interdependence perspective. *Academy of Management Review*, 37(3), 419-440.

Raub, S. (2017). When employees walk the company talk: The importance of employee involvement in corporate philanthropy. *Human Resource Management*, 56(5), 837-850.

Rossi, A., & Tarquinio, L. (2017). An analysis of sustainability report assurance statements: Evidence from Italian listed companies. *Managerial Auditing Journal*, *32*(6), 578-602.

Santos, F., Pache, A. C., & Birkholz, C. (2015). Making hybrids work: Aligning business models and organizational design for social enterprises. *California Management Review*, *57*(3), 36-58.

Sen, S., Bhattacharya, C. B., & Korschun, D. (2006). The role of corporate social responsibility in strengthening multiple stakeholder relationships: A field experiment. *Journal of the Academy of Marketing Science*, *34*(2), 158-166.

Seo, H., Luo, J., & Kaul, A. (2021). Giving a little to many or a lot to a few? The returns to variety in corporate philanthropy. *Strategic Management Journal*, 42(9), 1734-1764.

Strand, R. (2013). The chief officer of corporate social responsibility: A study of its presence in top management teams. *Journal of Business Ethics*, 112, 721-734.

Strand, R. (2014). Strategic leadership of corporate sustainability. *Journal of Business Ethics*, 123, 687-706.

Thun, T. W., & Zülch, H. (2023). The effect of chief sustainability officers on sustainability reporting—A management perspective. *Business Strategy and the Environment*, 32(4), 2093-2110.

Tracey, P., & Jarvis, O. (2006). An enterprising failure: why a promising social franchise collapsed. *Stanford Social Innovation Review*, *5*, 66-70.

Urso, F. (2022, May 4). Number of company sustainability officers triples in 2021 - Study.

Reuters. Retrieved from: https://www.reuters.com/business/sustainable-business/number-company-sustainability-officers-triples-2021-study-2022-05-04/

Velte, P., & Stawinoga, M. (2020). Do chief sustainability officers and CSR committees influence CSR-related outcomes? A structured literature review based on empirical-quantitative research findings. *Journal of Management Control*, 31(4), 333-377.

Vishwanathan, P., van Oosterhout, H., Heugens, P. P., Duran, P., & Van Essen, M. (2020). Strategic CSR: A concept building meta-analysis. *Journal of Management Studies*, *57*(2), 314-350.

Waldman, D. A., Siegel, D. S., & Javidan, M. (2006). Components of CEO transformational leadership and corporate social responsibility. *Journal of Management Studies*, *43*(8), 1703-1725.

Walker, E. T., & Rea, C. M. (2014). The political mobilization of firms and industries. *Annual Review of Sociology*, 40(1), 281-304.

Walls, J. L., & Berrone, P. (2017). The power of one to make a difference: How informal and formal CEO power affect environmental sustainability. *Journal of Business Ethics*, *145*, 293-308.

Wang, T., Fu, Y., Rui, O., & De Castro, J. (2024). Catch up with the good and stay away from the Bad: CEO decisions on the appointment of chief sustainability officers. *Journal of Management Studies*, 61(4), 1295-1326.

Wang, H., & Qian, C. (2011). Corporate philanthropy and corporate financial performance: The roles of stakeholder response and political access. *Academy of Management Journal*, 54(6), 1159-1181.

Weinreb Group. (2021). The Chief Sustainability Officers 10 years later: The rise of ESG in the C-suite. Retrieved from https://weinrebgroup.com/2021_cso_landing/cso-chief-sustainability-officer-esg-report-2021/.

Wiengarten, F., Lo, C. K., & Lam, J. Y. (2017). How does sustainability leadership affect firm performance? The choices associated with appointing a chief officer of corporate social responsibility. *Journal of Business Ethics*, 140, 477-493.

Wood, D. J. (2010). Measuring corporate social performance: A review. *International Journal of Management Reviews*, 12(1), 50-84.

Zhou, Y. M. (2011). Synergy, coordination costs, and diversification choices. *Strategic*

Management Journal, 32(6), 624-639.

TABLES AND FIGURES

Table 1. Summary statistics and correlation table

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) CSO presence	0.300	0.458	1.000								
(2) government CSO	0.078	0.269	0.445*	1.000							
(3) Donation	1.722	1.661	0.223*	0.216*	1.000						
(4) Strategic investment	2216.162	3725.906	0.157*	0.124*	0.157*	1.000					
(5) R&D	1481.107	3008.037	0.099*	0.095*	0.075*	0.954*	1.000				
(6) Advertising	735.055	1246.655	0.232*	0.144*	0.286*	0.688*	0.437*	1.000			
(7) Materiality pressure	6.173	1.698	-0.056*	-0.055*	0.091*	0.123*	0.155*	-0.006	1.000		
(8) VP CSO	0.077	0.266	0.366*	0.267*	0.230*	0.051	-0.021	0.204*	-0.032	1.000	
(9) Sustainability committee	0.368	0.482	0.277*	0.196*	0.238*	0.073*	0.033	0.137*	0.037	0.142*	1.000
(10) Corporate giving	0.011	0.103	0.110*	0.025	-0.101*	-0.043	-0.036	-0.041	0.032	-0.002	0.090*
(11) CEO career horizon	0.363	0.481	0.029	-0.044	0.011	-0.062*	-0.059*	-0.044	0.053	0.055*	0.035
(12) CEO-chairman duality	0.654	0.476	0.040	0.110*	0.127*	-0.055*	-0.051	-0.040	0.091*	0.078*	0.113*
(13) CEO bonus ratio	0.197	0.350	-0.018	0.046	0.081*	-0.062*	-0.049	-0.068*	-0.083*	-0.007	0.085*
(14) ROA	0.055	0.073	0.041	-0.077*	0.033	0.197*	0.192*	0.127*	0.129*	-0.007	0.016
(15) Firm size	11.279	1.522	0.188*	0.276*	0.330*	0.134*	0.085*	0.196*	0.000	0.083*	0.189*
(16) Employee	4.42	1.213	0.231*	0.163*	0.291*	0.220*	0.124*	0.358*	0.143*	0.098*	0.133*
(17) Capital intensity	0.034	0.033	0.049	-0.086*	-0.036	0.110*	0.079*	0.137*	0.083*	0.013	-0.029
(18) Financial slack	0.139	0.132	-0.009	0.033	-0.020	0.318*	0.353*	0.101*	-0.169*	0.024	-0.098*
(19) Leverage	41.49	1423.218	-0.018	-0.008	-0.018	-0.017	-0.014	-0.017	-0.019	-0.008	-0.021

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(10) Corporate giving	1.000									
(11) CEO career horizon	-0.017	1.000								
(12) CEO-chairman duality	0.076*	0.118*	1.000							
(13) CEO bonus ratio	-0.023	-0.004	0.068*	1.000						
(14) ROA	0.045	0.042	-0.085*	-0.058*	1.000					
(15) Firm size	0.056*	0.040	0.116*	0.178*	-0.099*	1.000				
(16) Employee	0.005	0.034	0.051	-0.052	0.264*	0.312*	1.000			
(17) Capital intensity	0.128*	-0.004	0.003	-0.142*	0.065*	-0.371*	0.159*	1.000		
(18) Financial slack	-0.049	-0.053	-0.210*	0.085*	0.091*	-0.136*	-0.245*	-0.091*	1.000	
(19) Leverage	-0.003	-0.021	0.020	-0.011	-0.007	-0.032	-0.062*	0.023	-0.029	1.000

Note. $^{*}P < 0.05$

Table 2. Descriptives of CSO background

Variables	Obs	Mean	Std. Dev.	Min	Max
CSO gender	452	.591	.492	0	1
CSO tenure	452	4.614	3.599	.167	16.083
Organization tenure	452	16.27	11.857	.167	47
MBA	452	.19	.393	0	1
Legal degree	452	.235	.424	0	1
NGO	452	.783	.413	0	1
Government CSO	452	.281	.45	0	1
Outsider	452	.363	.481	0	1
Career variety	449	.338	.202	.073	.833
Core function	452	.283	.451	0	1
Sustainability expertise	452	.308	.462	0	1

Table 3. CSO and substitution effect

	(1) Strategic investment	(2) R&D	(3) Advertising	(4) Strategic investment	(5) R&D	(6) Advertising
CSO presence	717.286*	660.239**	178.828	-133.491	-29.778	-103.712
	(416.620)	(319.240)	(124.690)	(243.847)	(220.660)	(86.852)
Government CSO				2,284.733*	1,506.807*	777.926**
				(1,185.640)	(817.955)	(380.478)
Donation	46.364	42.187	13.551	10.274	-0.649	10.924
	(86.198)	(68.403)	(22.292)	(80.283)	(63.260)	(21.529)
CSO presence × Donation	-271.626**	-246.437**	-43.306			
	(122.171)	(95.597)	(39.264)			
Government CSO × Donation				-469.735*	-310.760*	-158.975*
				(243.743)	(170.523)	(87.060)
Materiality pressure	-53.898	8.694	-107.139	-57.426	13.781	-71.207
	(117.499)	(93.482)	(80.469)	(107.166)	(89.285)	(98.332)
VP CSO	1,184.239	751.727	437.360*	1,180.598	735.371	445.228**
	(859.915)	(634.554)	(237.434)	(802.922)	(608.137)	(215.660)
Sustainability committee	-28.498	10.669	-60.236	-129.479	-70.741	-58.738
	(238.574)	(216.643)	(80.330)	(276.122)	(251.174)	(67.190)
Corporate giving	-115.683	-121.698	-13.765	-361.437	-273.728	-87.708
	(212.393)	(164.415)	(59.471)	(358.534)	(263.154)	(102.458)
CEO career horizon	-221.841*	-223.935**	-28.523	-224.379*	-217.447**	-6.932
	(114.090)	(103.609)	(32.933)	(115.699)	(107.769)	(32.473)
CEO-chairman duality	293.466	323.232*	46.683	166.804	226.322	-59.518
	(197.403)	(167.397)	(60.335)	(202.149)	(173.848)	(60.564)
CEO bonus ratio	12.091	-30.900	55.131	34.523	-24.667	59.191
	(224.081)	(181.783)	(81.365)	(242.367)	(199.333)	(101.767)
ROA	-5,141.844***	-3,951.937***	-1,035.806	-5,147.210***	-3,955.312***	-1,191.898**
	(1,832.963)	(1,388.438)	(662.312)	(1,701.464)	(1,333.052)	(554.384)
Firm size	215.344*	165.448*	7.425	196.612	168.567*	28.045
	(120.343)	(96.001)	(40.807)	(125.084)	(97.562)	(42.716)
Employee	2,065.108**	1,453.246**	632.081**	2,048.963**	1,454.199**	594.765**
	(899.743)	(639.757)	(266.958)	(797.478)	(576.089)	(231.095)
Capital intensity	13,246.784***	10,127.404**	2,489.201*	13,658.129***	10,637.104***	3,021.026**
	(4,750.877)	(3,895.292)	(1,261.740)	(4,673.229)	(3,920.981)	(1,333.069)
Financial slack	-646.544	-608.346	-294.875	-538.829	-580.570	41.742
	(1,015.164)	(813.877)	(400.332)	(1,024.204)	(823.481)	(339.402)
Leverage	-0.142	-0.082	-0.033	-0.104	-0.053	-0.051
	(0.148)	(0.119)	(0.040)	(0.134)	(0.108)	(0.050)
Constant	-9,152.486**	-7,596.975**	-825.472	-8,786.194**	-7,015.317***	-1,770.877
	(4,017.596)	(2,920.446)	(1,409.236)	(3,569.654)	(2,641.817)	(1,140.155)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,233	1,233	1,233	1,233	1,233	1,233
R-squared	0.383	0.341	0.395	0.402	0.353	0.266

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. CSO and substitution effect - additional control variables on CSO backgrounds

	(1) Strategic investment	(2) R&D	(3) Advertising	(4) Strategic investment	(5) R&D	(6) Advertising
CSO presence	814.704	816.535*	102.809	-475.590	-314.480	-161.110*
	(537.442)	(466.759)	(103.293)	(301.098)	(275.438)	(83.794)
Government CSO				4,529.697*	3,647.229*	882.468*
				(2,313.602)	(1,866.239)	(458.056)
Donation	-9.740	-9.006	7.335	-19.300	-26.245	6.945
	(89.707)	(74.546)	(21.362)	(80.348)	(66.081)	(20.039)
CSO presence × Donation	-455.440**	-416.825**	-61.449			
	(220.353)	(181.550)	(47.677)			
Government CSO × Donation				-1,128.446*	-914.969*	-213.477*
				(606.854)	(491.920)	(119.946)
Materiality pressure	-2.432	45.448	-92.958	-44.663	20.551	-65.213
	(178.887)	(160.610)	(83.086)	(149.912)	(139.859)	(99.644)
VP CSO	1,822.416	1,274.964	516.394**	1,827.799	1,277.464	550.334**
	(1,251.880)	(1,008.367)	(253.029)	(1,163.709)	(938.718)	(244.274)
Sustainability committee	-149.079	-79.516	-91.141	-259.883	-183.657	-76.226
	(323.314)	(280.642)	(88.131)	(370.943)	(327.879)	(76.413)
Corporate giving	-222.871	-228.516	-19.154	-691.468	-596.698	-94.770
	(400.745)	(330.797)	(82.234)	(641.294)	(523.934)	(121.594)
CEO career horizon	-216.186	-233.195	-18.634	-257.304	-256.257	-1.047
	(167.802)	(150.623)	(35.660)	(171.482)	(156.334)	(35.074)
CEO-chairman duality	296.223	343.633	32.209	95.090	168.401	-73.311
	(272.486)	(240.836)	(62.382)	(291.658)	(257.872)	(64.116)
CEO bonus ratio	169.793	101.794	84.926	248.325	159.874	88.452
	(321.765)	(260.267)	(92.610)	(351.477)	(290.918)	(114.615)
ROA	-6,930.874***	-5,597.113***	-1,173.451*	-6,880.263***	-5,550.397***	-1,329.866**
	(2,436.993)	(1,869.238)	(698.677)	(2,203.718)	(1,705.462)	(609.746)
Firm size	209.811	161.269	-2.924	229.968	201.546	28.422
	(173.770)	(144.173)	(44.364)	(175.551)	(142.560)	(45.857)
Employee	3,157.528**	2,453.526**	730.927**	3,077.835**	2,387.374**	690.461**
	(1,436.011)	(1,133.950)	(307.307)	(1,248.964)	(981.188)	(275.501)
Capital intensity	16,832.528***	13,634.853***	2,531.865**	17,517.882***	14,403.483***	3,114.399**
	(5,771.264)	(4,954.436)	(1,198.584)	(5,840.801)	(5,087.932)	(1,348.750)
Financial slack	-1,491.574	-1,343.549	-387.015	-1,217.502	-1,191.100	-26.402
	(1,416.841)	(1,140.400)	(422.260)	(1,391.766)	(1,123.703)	(369.328)
Leverage	-0.125	-0.074	-0.029	-0.057	-0.013	-0.044
	(0.210)	(0.179)	(0.044)	(0.193)	(0.163)	(0.055)
Outsider	1,906.612	1,483.085	429.600*	1,247.589	951.288	296.302
	(1,176.479)	(927.632)	(252.864)	(875.878)	(700.010)	(216.466)
Core function	-137.917	-37.929	-116.169	135.946	190.292	-54.346
	(553.257)	(431.337)	(146.843)	(421.927)	(356.308)	(121.593)
CSO gender	459.944	418.062	46.335	715.292	621.238	94.053
	(507.215)	(421.250)	(118.355)	(520.591)	(453.212)	(124.193)
NGO	-6.097	15.062	70.605	-285.506	-241.323	-44.183
	(617.347)	(529.075)	(115.833)	(570.191)	(489.124)	(114.942)
Sustainability expertise	560.908	398.358	130.632	474.708	385.607	89.101
	(1,401.574)	(1,117.217)	(293.169)	(1,221.045)	(981.791)	(270.589)
Constant	-13,773.913**	-12,031.770**	-1,089.825	-13,743.563**	-11,565.755**	-2,177.808*
	(6,069.494)	(4,902.505)	(1,506.948)	(5,597.098)	(4,463.854)	(1,301.633)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,233	1,233	1,233	1,233	1,233	1,233

R-squared	0.401	0.378	0.413	0.438	0.414	0.304

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Subsample analysis of CSO and substitution effect

	(1) Strategic investment	(2) R&D	(3) Advertising	(4) Strategic investment	(5) R&D	(6) Advertising
CSO presence	1,324.206*	1,256.882**	155.001	-226.408	-71.449	-154.959*
	(701.925)	(572.001)	(141.262)	(352.800)	(297.674)	(79.521)
Government CSO				5,116.006**	4,074.153**	1,041.853**
				(2,060.604)	(1,661.150)	(414.981)
Donation	43.594	44.051	18.757	28.957	9.413	19.545
	(170.387)	(127.799)	(47.201)	(151.654)	(116.337)	(39.929)
CSO presence × Donation	-400.505**	-376.743**	-62.668			
	(186.262)	(147.739)	(47.311)			
Government CSO × Donation				-1,137.307**	-906.491**	-230.816**
				(512.771)	(418.263)	(100.538)
Materiality pressure	-34.203	-39.640	-52.611	-36.929	-38.123	1.194
	(187.575)	(155.191)	(43.306)	(159.828)	(137.863)	(30.580)
VP CSO	1,638.946	1,160.326	460.434*	1,646.715	1,168.401	478.314**
	(1,215.778)	(962.839)	(260.171)	(1,096.688)	(877.751)	(235.693)
Sustainability committee	-50.671	-8.548	-63.486	-360.346	-258.404	-101.942
	(391.435)	(346.023)	(79.474)	(458.092)	(419.211)	(80.680)
Corporate giving	-217.187	-209.305	-17.063	-720.138	-612.084	-108.054
	(674.329)	(576.855)	(102.751)	(916.577)	(778.224)	(142.991)
CEO career horizon	-77.576	-120.143	-1.715	-153.527	-153.561	0.034
	(223.067)	(182.652)	(56.277)	(210.608)	(179.175)	(51.543)
CEO-chairman duality	-261.707	-105.795	-87.740	-697.406	-505.625	-191.781*
	(410.491)	(331.471)	(95.765)	(427.176)	(341.730)	(99.012)
CEO bonus ratio	-19.675	-102.000	150.668	117.365	-48.404	165.769
	(490.463)	(420.748)	(111.766)	(520.422)	(462.641)	(113.006)
ROA	-1,214.112	-1,189.891	118.553	-1,980.366	-1,680.336	-300.030
	(4,318.388)	(3,486.871)	(936.516)	(3,908.447)	(3,324.770)	(850.711)
Firm size	486.805**	340.162**	87.591**	467.655**	354.395**	113.259**
	(185.146)	(144.145)	(42.459)	(189.510)	(146.726)	(53.554)
Employee	4,730.853**	3,704.164**	997.928**	4,569.075***	3,615.133***	953.942***
	(1,976.591)	(1,547.471)	(427.386)	(1,619.776)	(1,268.967)	(352.787)
Capital intensity	22,713.800**	19,683.941**	2,970.199	25,473.114**	21,579.436**	3,893.678*
	(10,796.683)	(9,008.627)	(2,164.960)	(10,419.032)	(8,711.623)	(2,051.849)
Financial slack	-3,575.934*	-3,010.269*	-794.557	-3,309.253	-2,688.946	-620.307
	(2,095.827)	(1,742.858)	(519.420)	(1,980.919)	(1,689.007)	(441.964)
Leverage	-6.259*	-5.179*	-1.107	-5.852*	-4.904*	-0.948
	(3.511)	(2.754)	(0.789)	(3.123)	(2.450)	(0.714)
Constant	-23,947.594**	-19,352.825**	-4,053.427*	-23,117.423***	-18,466.299***	-4,651.124***
	(9,315.980)	(7,334.736)	(2,017.004)	(7,812.577)	(6,165.345)	(1,694.095)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	729	729	729	729	729	729
R-squared	0.515	0.502	0.490	0.572	0.560	0.521

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. CSO and substitution effect with Random Effects Model

	(1) Strategic investment	(2) R&D	(3) Advertising	(4) Strategic investment	(5) R&D	(6) Advertising
CSO presence	666.815*	625.085**	174.717	-187.084	-111.030	-98.996
	(385.548)	(301.285)	(122.798)	(259.427)	(227.266)	(90.434)
Government CSO				2,392.472*	1,624.333*	790.995*
				(1,318.410)	(946.159)	(404.524)
Donation	99.280	66.079	16.788	34.158	20.674	16.297
	(97.001)	(72.377)	(23.480)	(84.008)	(65.787)	(22.675)
CSO presence × Donation	-297.266**	-261.133**	-43.961			
	(144.049)	(103.915)	(41.414)			
Government CSO × Donation				-513.840*	-341.221*	-172.729*
				(269.050)	(193.443)	(91.874)
Materiality pressure	-73.074	0.859	-106.306	-65.479	4.913	-72.598
	(107.930)	(86.096)	(80.376)	(101.703)	(80.631)	(98.085)
VP CSO	1,254.334	797.354	437.640*	1,223.048	798.348	441.535**
	(951.633)	(682.284)	(245.768)	(847.887)	(650.914)	(223.306)
Sustainability committee	42.490	39.817	-51.497	-87.903	-36.188	-46.729
	(296.063)	(242.065)	(79.366)	(306.687)	(281.610)	(71.071)
Corporate giving	-493.793*	-305.847**	-34.160	-496.056	-416.989*	-105.181
	(252.338)	(149.679)	(60.626)	(347.562)	(251.202)	(102.094)
CEO career horizon	-241.399*	-239.554**	-27.156	-233.091*	-230.660**	-6.721
	(123.205)	(106.752)	(33.162)	(120.406)	(112.184)	(32.706)
CEO-chairman duality	269.363	312.200*	44.632	159.316	220.041	-61.590
	(206.880)	(171.360)	(59.930)	(204.703)	(179.366)	(60.064)
CEO bonus ratio	171.606	48.278	65.252	117.019	55.523	75.192
	(201.053)	(162.947)	(82.622)	(228.207)	(176.940)	(102.414)
ROA	-3,711.608**	-3,303.272**	-954.793	-4,448.018***	-3,236.082**	-1,073.589*
	(1,781.150)	(1,351.079)	(671.492)	(1,683.301)	(1,295.287)	(569.356)
Firm size	286.508**	202.183**	12.547	233.175*	202.013**	36.305
	(130.543)	(98.977)	(41.331)	(128.150)	(101.706)	(43.064)
Employee	1,669.858**	1,241.601**	613.433**	1,843.879***	1,221.374**	573.381***
	(718.229)	(559.948)	(252.489)	(713.389)	(500.387)	(213.014)
Capital intensity	12,116.837*	9,732.768**	2,452.534*	13,115.481**	10,113.589**	2,895.296**
	(6,225.489)	(4,435.035)	(1,388.159)	(5,302.702)	(4,382.117)	(1,457.253)
Financial slack	564.741	-22.520	-226.720	71.411	71.359	130.519
	(1,131.923)	(897.965)	(389.367)	(1,060.187)	(923.457)	(332.979)
Leverage	-0.141	-0.079	-0.034	-0.101	-0.048	-0.051
	(0.132)	(0.110)	(0.040)	(0.125)	(0.097)	(0.050)
Constant	-10,478.288***	-8,752.684***	-1,720.304	-10,513.034***	-8,327.867***	-2,018.534
	(3,885.746)	(2,959.942)	(1,410.643)	(3,489.080)	(2,574.796)	(1,285.349)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,233	1,233	1,233	1,233	1,233	1,233
R-squared	0.375	0.338	0.395	0.400	0.349	0.266

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7. CSO functional background and substitution effect

	(1) Strategic investment	(2) R&D	(3) Advertising	(4) Strategic investment	(5) R&D	(6) Advertising
Government CSO	4,490.389*	3,645.254*	845.135*	4,302.723**	3,487.720*	815.003*
	(2,303.023)	(1,860.606)	(453.381)	(2,159.393)	(1,759.285)	(417.036)
Donation	-27.920	-26.678	-1.242	0.111	-12.604	12.714
	(83.509)	(68.900)	(20.537)	(80.100)	(67.339)	(18.598)
Government CSO × Donation	-1,120.749*	-914.582*	-206.166*	-1,021.136*	-839.556*	-181.580*
	(604.854)	(490.782)	(119.244)	(546.488)	(452.494)	(103.079)
Core function	-16.940	182.610	-199.549	100.447	165.345	-64.898
	(592.737)	(478.623)	(175.875)	(428.009)	(360.226)	(124.480)
Core function × Donation	75.637	3.801	71.836			
	(159.276)	(134.000)	(47.074)			
Sustainability expertise	493.484	386.551	106.933	1,066.308	801.362	264.946
	(1,235.837)	(992.446)	(275.132)	(2,103.055)	(1,678.985)	(465.214)
Sustainability expertise × Donation				-309.131	-217.246	-91.885
				(502.878)	(404.527)	(109.951)
CSO presence	-467.330	-314.065	-153.266*	-474.227	-313.522	-160.705*
	(300.577)	(274.053)	(84.282)	(298.478)	(273.888)	(83.304)
Materiality pressure	-47.193	20.424	-67.617	-32.381	29.182	-61.563
	(148.786)	(139.538)	(99.877)	(162.009)	(149.041)	(100.051)
VP CSO	1,812.625	1,276.702	535.923**	1,817.658	1,270.338	547.320**
	(1,161.281)	(936.698)	(244.588)	(1,150.149)	(928.287)	(241.660)
Sustainability committee	-256.359	-183.480	-72.879	-257.289	-181.834	-75.455
	(370.853)	(328.292)	(75.587)	(379.772)	(333.262)	(79.504)
Corporate giving	-680.029	-596.123	-83.906	-646.440	-565.054	-81.386
	(635.546)	(521.450)	(118.410)	(613.086)	(503.617)	(113.809)
CEO career horizon	-260.210	-256.403	-3.807	-254.003	-253.937	-0.066
	(171.982)	(156.685)	(35.330)	(171.913)	(156.936)	(34.585)
CEO-chairman duality	99.430	168.619	-69.189	108.078	177.528	-69.450
	(292.324)	(258.868)	(63.891)	(288.825)	(255.267)	(64.047)
CEO bonus ratio	249.541	159.935	89.606	239.513	153.681	85.832
	(351.929)	(291.102)	(114.824)	(345.225)	(286.240)	(113.952)
ROA	-6,899.903***	-5,551.384***	-1,348.519**	-6,839.917***	-5,522.044***	-1,317.873**
	(2,212.168)	(1,711.646)	(611.730)	(2,177.786)	(1,687.902)	(602.056)
Firm size	226.294	201.361	24.932	237.670	206.958	30.712
	(175.960)	(142.630)	(45.902)	(173.632)	(140.614)	(46.315)
Employee	3,089.270**	2,387.949**	701.321**	3,051.008**	2,368.521**	682.487**
	(1,255.484)	(985.907)	(277.224)	(1,224.041)	(961.891)	(270.332)
Capital intensity	17,392.484***	14,397.182***	2,995.302**	17,892.157***	14,666.510***	3,225.647**
	(5,833.492)	(5,086.922)	(1,347.067)	(5,827.976)	(5,061.063)	(1,351.132)
Financial slack	-1,218.830	-1,191.167	-27.663	-1,179.955	-1,164.714	-15.241
	(1,395.628)	(1,124.501)	(368.548)	(1,376.379)	(1,113.008)	(366.817)
Leverage	-0.055	-0.012	-0.043	-0.058	-0.013	-0.045
	(0.192)	(0.163)	(0.055)	(0.193)	(0.163)	(0.055)
Outsider	1,282.430	953.038	329.392	1,211.974	926.258	285.716
	(865.604)	(695.231)	(208.038)	(879.799)	(703.323)	(217.736)
NGO	-310.904	-242.599	-68.305	-327.289	-270.686	-56.603
	(584.269)	(497.530)	(123.658)	(597.652)	(509.996)	(119.604)
CSO gender	717.251	621.337	95.914	741.171	639.425	101.746
	(523.178)	(453.950)	(127.599)	(513.255)	(447.857)	(123.923)
Constant	-13,722.491**	-11,564.696**	-2,157.795	-13,801.746**	-11,606.644**	-2,195.102*
	(5,586.474)	(4,457.067)	(1,299.211)	(5,614.490)	(4,479.441)	(1,303.663)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,233	1,233	1,233	1,233	1,233	1,233
R-squared	0.438	0.414	0.306	0.439	0.415	0.306

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8. CSO functional background and substitution effect – Full Model

	(1) Strategic investment	(2) R&D	(3) Advertising
Government CSO	4,245.898*	3,472.120*	773.777*
	(2,147.700)	(1,753.188)	(412.245)
Donation	-11.529	-15.361	3.832
	(81.916)	(69.048)	(18.752)
Government CSO × Donation	-1,014.595*	-840.011*	-174.584*
	(543.741)	(450.933)	(102.099)
Core function	-67.285	146.131	-213.416
	(633.069)	(508.581)	(184.843)
Core function × Donation	52.226	-14.221	66.447
	(154.198)	(131.275)	(46.368)
Sustainability expertise	1,039.379	767.323	272.056
	(2,070.359)	(1,653.434)	(460.626)
Sustainability expertise × Donation	-294.525	-206.116	-88.409
	(490.239)	(394.503)	(107.565)
CSO presence	-520.471*	-355.136	-165.335*
	(299.872)	(268.151)	(84.498)
Materiality pressure	-21.892	39.099	-60.992
	(168.602)	(155.113)	(100.213)
VP CSO	1,689.760	1,182.631	507.129**
	(1,081.724)	(869.266)	(231.449)
Sustainability committee	-251.522	-179.925	-71.597
	(384.340)	(337.480)	(79.313)
Corporate giving	-667.061	-589.179	-77.882
	(625.191)	(514.862)	(114.096)
CEO career horizon	-268.400	-262.945*	-5.455
	(164.759)	(151.912)	(33.467)
CEO-chairman duality	120.740	184.172	-63.432
	(289.116)	(255.838)	(63.806)
CEO bonus ratio	235.118	149.412	85.706
	(347.403)	(289.375)	(113.544)
ROA	-6,889.459***	-5,546.082***	-1,343.377**
	(2,176.667)	(1,689.582)	(600.936)
Firm size	228.568	202.590	25.978
	(175.407)	(141.627)	(46.553)
Employee	3,074.756**	2,378.585**	696.171**
	(1,229.782)	(965.991)	(271.955)
Capital intensity	17,865.371***	14,736.365***	3,129.005**
	(5,796.245)	(5,044.180)	(1,346.538)
Financial slack	-1,151.014	-1,141.421	-9.593
	(1,386.060)	(1,120.841)	(365.953)
Leverage	-0.067	-0.021	-0.045
	(0.196)	(0.167)	(0.055)
Outsider	1,205.325	896.012	309.313
	(888.522)	(709.998)	(215.880)
CSO gender	591.961	522.955	69.007

	(477.440)	(394.369)	(119.412)
Constant	-13,783.384**	-11,607.691**	-2,175.694*
	(5,609.515)	(4,479.393)	(1,299.820)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	1,233	1,233	1,233
R-squared	0.439	0.415	0.307

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure 1. The role of CSO presence in philanthropic donation and strategic investment

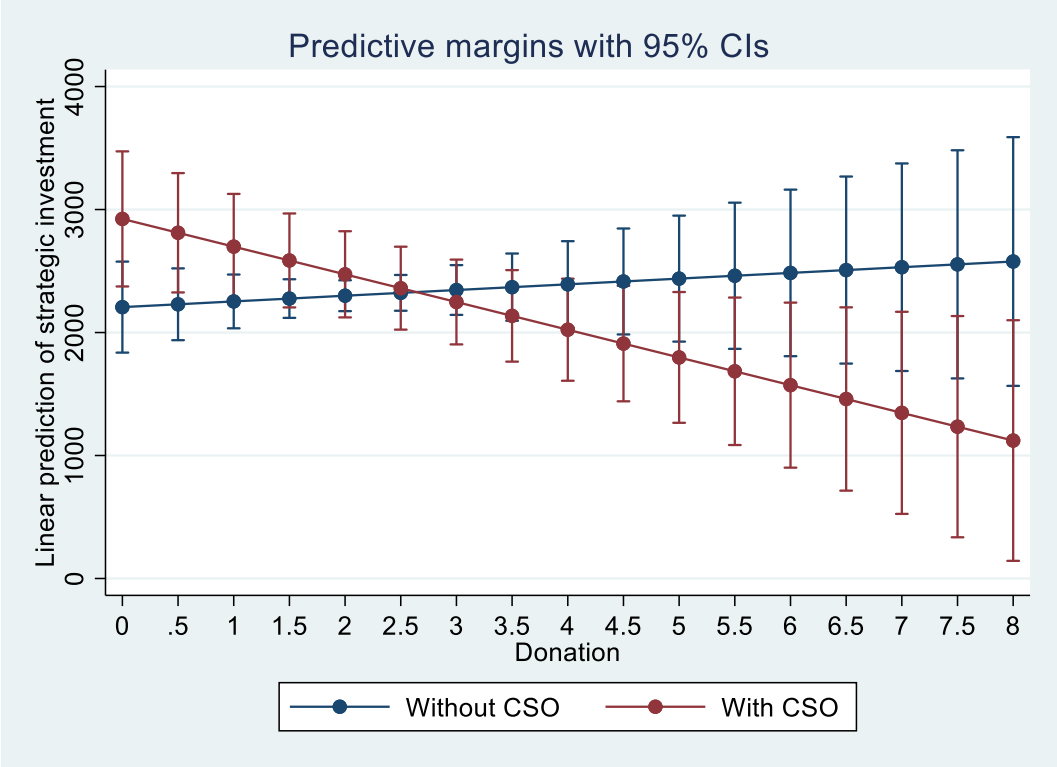
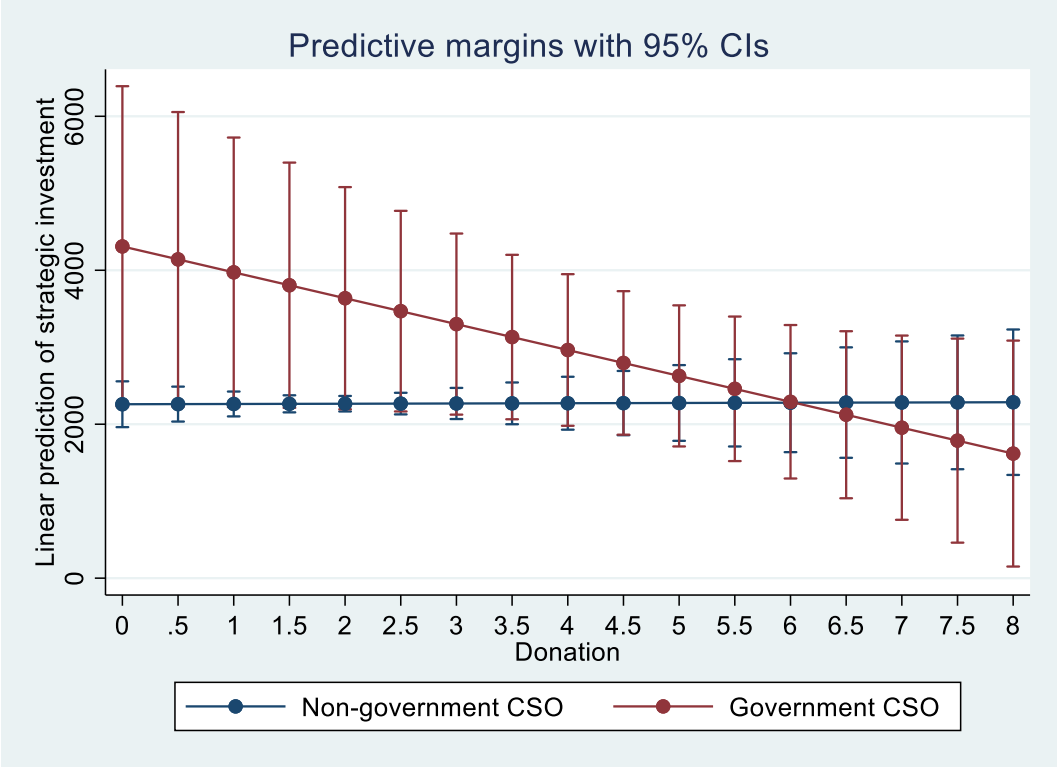


Figure 2. The role of Government CSO in philanthropic donation and strategic investment



APPENDIX TABLES

Appendix Table A. CSO and substitution effect: Dependent variables are not winsorized

	(1) Strategic investment	(2) R&D	(3) Advertising	(4) Strategic investment	(5) R&D	(6) Advertising
CSO presence	1,409.904*	1,311.235**	228.615	-81.116	27.900	-109.015
	(788.296)	(655.622)	(152.848)	(302.429)	(273.355)	(89.539)
Government CSO				4,982.281*	3,974.806*	1,007.475*
				(2,609.653)	(2,099.285)	(520.324)
Donation	-0.847	-1.813	9.796	-12.559	-21.784	9.225
	(96.906)	(78.599)	(23.788)	(90.948)	(73.495)	(22.467)
CSO presence × Donation	-440.154**	-402.654**	-57.555			
	(216.105)	(178.011)	(47.089)			
Government CSO × Donation				-1,140.641*	-924.398*	-216.243*
				(626.555)	(508.036)	(123.855)
Materiality pressure	-49.028	11.264	-106.183	-62.792	7.917	-70.709
	(161.530)	(146.652)	(81.349)	(134.104)	(128.712)	(97.091)
VP CSO	1,896.985	1,368.561	533.119*	1,897.880	1,356.522	541.358**
	(1,401.226)	(1,110.932)	(297.374)	(1,237.401)	(987.770)	(265.948)
Sustainability committee	-13.864	23.821	-59.390	-207.601	-142.179	-65.422
	(291.308)	(257.063)	(84.591)	(356.577)	(317.156)	(73.425)
Corporate giving	-337.088	-321.051	-35.361	-884.481	-749.699	-134.781
	(437.929)	(362.399)	(82.326)	(753.695)	(614.812)	(142.462)
CEO career horizon	-282.720*	-282.921*	-31.467	-305.279*	-293.947*	-11.333
	(159.938)	(144.497)	(35.580)	(163.205)	(149.487)	(34.976)
CEO-chairman duality	396.606	421.721*	51.889	143.046	208.852	-65.807
	(273.949)	(236.903)	(64.589)	(286.646)	(251.768)	(65.193)
CEO bonus ratio	46.295	4.697	58.551	147.481	78.220	69.261
	(294.077)	(240.944)	(86.319)	(335.285)	(281.267)	(107.423)
ROA	-7,021.329**	-5,673.817***	-1,188.452	-6,978.658***	-5,636.504***	-1,342.154**
	(2,698.830)	(2,053.270)	(768.584)	(2,331.855)	(1,801.087)	(639.241)
Firm size	234.852	182.748	4.743	220.360	194.285	26.075
	(178.930)	(148.616)	(44.617)	(178.055)	(144.032)	(46.293)
Employee	3,282.665**	2,553.467**	754.760**	3,188.039**	2,477.528**	710.511**
	(1,596.008)	(1,258.546)	(344.182)	(1,330.536)	(1,045.655)	(292.003)
Capital intensity	17,309.827***	13,937.567***	2,682.187**	17,782.177***	14,558.001***	3,224.175**
	(6,091.110)	(5,119.290)	(1,312.356)	(5,934.683)	(5,088.928)	(1,377.731)
Financial slack	-1,377.922	-1,258.861	-366.202	-1,123.798	-1,109.846	-13.952
	(1,493.413)	(1,189.536)	(442.543)	(1,439.566)	(1,158.954)	(379.850)
Leverage	-0.167	-0.105	-0.037	-0.088	-0.037	-0.051
	(0.238)	(0.202)	(0.046)	(0.206)	(0.175)	(0.053)
Constant	-14,733.264**	-12,757.220**	-1,313.154	-14,206.309**	-11,950.732**	-2,255.577
	(6,855.317)	(5,503.051)	(1,659.920)	(5,865.611)	(4,674.290)	(1,356.731)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,233	1,233	1,233	1,233	1,233	1,233
R-squared	0.372	0.351	0.391	0.422	0.399	0.295

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table B. Panel logit model with firm FE predicting the presence of CSO/Government CSO

	(1) CSO presence	(2) Government CSO
Donation	0.017	-0.269
	(0.109)	(0.200)
Materiality pressure	0.016	-0.593
	(0.260)	(0.986)
Sustainability committee	0.545	4.086***
	(0.482)	(1.221)
Corporate giving	2.279	16.359
	(2.168)	(2,595.881)
CEO career horizon	-0.049	-0.727
	(0.277)	(0.666)
CEO-chairman duality	-0.264	3.708***
	(0.405)	(1.041)
CEO bonus ratio	0.323	-0.434
	(0.460)	(0.860)
ROA	-6.206*	-16.743*
	(3.737)	(8.875)
Firm size	-0.083	0.760**
	(0.242)	(0.340)
Employee	-0.553	0.384
	(0.346)	(0.637)
Capital intensity	16.546**	-13.920
	(8.414)	(17.248)
Financial slack	1.476	9.355**
	(1.993)	(4.744)
Leverage	0.001	0.052
	(0.003)	(0.049)
# of Fortune 500	-0.097	-0.221
	(0.059)	(0.152)
Board size	0.349***	0.270
	(0.085)	(0.181)
Women on board%	1.878	3.765
	(1.926)	(3.576)
Year FE	Yes	Yes
Firm FE	Yes	Yes
Observations	868	334

Note. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table C. Panel OLS with firm FE predicting the effect of new CSO arrival on philanthropic donation activities

	(1) Donation	(2) Number of donation causes	(3) New donation cause	(4) New donation recipient
Arrival of new CSO	0.152	0.163	0.064	-0.019
	(0.119)	(0.609)	(0.061)	(0.062)
Materiality pressure	0.046	0.473	0.014	0.019
	(0.099)	(0.502)	(0.032)	(0.037)
Sustainability committee	0.520**	1.364**	0.001	0.040
	(0.218)	(0.643)	(0.046)	(0.046)
Corporate giving	0.288***	2.421***	-0.014	-0.019
	(0.107)	(0.765)	(0.080)	(0.078)
CEO career horizon	-0.076	-0.616	0.023	-0.023
	(0.108)	(0.446)	(0.034)	(0.039)
CEO-chairman duality	-0.011	0.090	0.030	0.015
	(0.155)	(0.731)	(0.053)	(0.050)
CEO bonus ratio	0.156	0.009	0.013	-0.032
	(0.136)	(0.478)	(0.051)	(0.057)
ROA	-0.833	-4.135	-0.178	0.154
	(0.881)	(4.090)	(0.360)	(0.413)
Firm size	0.023	-0.254	0.057	0.083
	(0.059)	(0.239)	(0.055)	(0.057)
Employee	0.399**	1.698**	-0.071	-0.073
	(0.192)	(0.684)	(0.062)	(0.056)
Capital intensity	1.743	10.226	0.433	0.885
	(2.856)	(13.108)	(0.805)	(1.236)
Financial slack	-0.414	-2.627	0.033	-0.238
	(0.467)	(2.230)	(0.237)	(0.197)
Leverage	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.001)	(0.000)	(0.000)
# of Fortune 500	0.020	0.163	0.003	0.004
	(0.025)	(0.114)	(0.006)	(0.006)
Board size	0.020	0.219*	0.007	0.018*
	(0.031)	(0.122)	(0.010)	(0.010)
Women on board%	0.254	1.836	0.024	0.133
	(0.720)	(3.095)	(0.228)	(0.261)
Constant	-1.847	-8.137	-0.321	-0.725
	(1.401)	(6.357)	(0.502)	(0.559)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	1,215	1,215	1,143	1,143
R-squared	0.082	0.155	0.030	0.042

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table D. Testing instrumentality mechanism: Government CSO and lobbying activities

	(1) Lobbying amount	(2) Change in lobbying amount	(3) Number of lobbying issues	(4) Change in the number of lobbying issues
Government CSO	-0.666	-0.118	0.008	0.207
	(0.621)	(0.506)	(0.105)	(0.142)
CSO presence	0.452	-0.349	-0.045	-0.013
	(0.412)	(0.299)	(0.052)	(0.069)
Materiality pressure	0.340**	0.053	0.030	0.007
	(0.155)	(0.129)	(0.020)	(0.036)
VP CSO	0.578	0.245	0.031	-0.182
	(0.544)	(0.370)	(0.074)	(0.129)
Sustainability committee	0.311	0.145	0.016	-0.172*
	(0.321)	(0.173)	(0.052)	(0.095)
Corporate giving	-0.280	-1.264	0.148**	0.033
	(0.863)	(0.967)	(0.057)	(0.058)
CEO career horizon	-0.228	0.040	-0.050*	-0.027
	(0.188)	(0.123)	(0.025)	(0.048)
CEO-chairman duality	-0.127	0.055	0.011	-0.086
	(0.277)	(0.190)	(0.052)	(0.078)
CEO bonus ratio	-0.011	0.440*	-0.006	0.023
	(0.277)	(0.259)	(0.050)	(0.105)
ROA	-1.388	2.117	0.026	0.459
	(3.063)	(1.469)	(0.342)	(0.324)
Firm size	0.191	-0.504	-0.051	-0.039
	(0.211)	(0.325)	(0.072)	(0.116)
Employee	1.958***	0.594*	0.222***	-0.084
	(0.499)	(0.322)	(0.076)	(0.113)
Capital intensity	5.314	-7.458	2.061	4.480**
	(4.312)	(5.192)	(2.045)	(1.783)
Financial slack	0.969	1.592	-0.081	0.291
	(1.704)	(1.139)	(0.230)	(0.288)
Leverage	0.001	0.000**	0.000	0.000***
	(0.001)	(0.000)	(0.000)	(0.000)
Lobbying dummy	-2.215**	-0.037	-1.779***	-0.501**
	(0.978)	(0.336)	(0.253)	(0.201)
Constant	-8.472**	2.973	1.572**	0.645
	(3.445)	(2.743)	(0.621)	(0.945)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	1,233	1,159	928	1,159
R-squared	0.240	0.135	0.557	0.593

Note. Robust standard errors clustered at firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table E. Testing legitimacy mechanism: Including the interaction term

between VP CSO and donation

	(1) Strategic investment	(2) R&D	(3) Advertising
Government CSO	4,647.629**	3,679.242*	968.387**
	(2,321.418)	(1,868.484)	(464.696)
Donation	43.667	27.875	15.793
	(95.766)	(77.487)	(23.349)
Government CSO × Donation	-965.477*	-769.694*	-195.784*
	(514.013)	(418.184)	(101.013)
VP CSO	3,876.129	3,103.708	772.422
	(2,725.563)	(2,129.264)	(605.447)
VP CSO × Donation	-820.991	-725.097	-95.893
	(681.840)	(536.447)	(149.237)
Materiality pressure	-11.924	52.844	-64.768
	(163.558)	(156.444)	(97.670)
CSO presence	-142.563	-26.370	-116.193
	(310.975)	(277.964)	(91.547)
Sustainability committee	-210.877	-145.072	-65.804
	(377.415)	(332.942)	(76.331)
Corporate giving	-1,142.396	-977.490	-164.906
	(1,006.515)	(825.563)	(185.402)
CEO career horizon	-281.108*	-272.599*	-8.509
	(157.193)	(144.597)	(34.373)
CEO-chairman duality	151.414	216.244	-64.829
	(285.365)	(250.752)	(64.927)
CEO bonus ratio	123.714	57.229	66.485
	(314.535)	(264.584)	(105.373)
ROA	-6,987.137***	-5,643.993***	-1,343.144**
	(2,245.236)	(1,727.903)	(629.967)
Firm size	243.337	214.578	28.759
	(177.083)	(142.059)	(46.820)
Employee	3,105.840**	2,404.930**	700.910**
	(1,224.324)	(955.585)	(276.386)
Capital intensity	16,982.113***	13,851.386***	3,130.726**
	(5,609.388)	(4,867.977)	(1,308.453)
Financial slack	-856.001	-873.328	17.327
	(1,368.227)	(1,102.158)	(367.286)
Leverage	-0.112	-0.058	-0.054
	(0.207)	(0.177)	(0.053)
Constant	-14,501.367**	-12,211.327***	-2,290.040*
	(5,797.397)	(4,609.603)	(1,359.967)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	1,233	1,233	1,233
R-squared	0.434	0.414	0.297

Note. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

CONCLUSION

This dissertation seeks to extend upper echelons theory by focusing on non-prototypical CEOs (e.g., female CEOs, racial minority CEOs, and CEOs with non-U.S. cultural origins) and new C-suite executives (e.g., Chief Sustainability Officers). Additionally, it aims to provide new perspectives on these executives within the context of a firm. In this section, I will summarize the major theoretical contributions and managerial implications of the three chapters of my dissertation.

The first chapter contributes to the literature on institutions and organizations, the roles of women and racial minorities in leadership, and transgender issues in the workplace. This chapter notes that female CEOs tend to overconform to institutional pressures compared to their male counterparts. Additionally, organizations led by female CEOs may emulate negative role models that make minimal or no efforts to advance diversity initiatives when facing higher scrutiny and potential penalties. In this context, the chapter emphasizes that the effectiveness of female and racial minority CEOs in advocating for diversity initiatives must be understood through the lens of how external pressures from the institutional environment shape the advocacy efforts of demographic minority CEOs. This perspective aids in reconciling the somewhat inconclusive relationship between CEOs' demographic minority status and the advancement of workplace diversity policies. Furthermore, this paper underscores that the external pressures faced by each minority group differ, suggesting that it may be problematic to group women and racial minorities as a single minority category. Finally, this chapter contributes to the literature examining the antecedents of diversity programs for socially stigmatized and marginalized groups. My findings also have important implications for managers, indicating that demographic minority CEOs could leverage external pressures and tensions among stakeholders to advance diversity policies that align with their firms' strategies and operating environments without compromising the legitimacy of their leadership positions.

In the second chapter, I present three major contributions. First, this paper expands on the existing literature regarding how cultural dimensions affect managerial preferences and behaviors across countries by highlighting that managers from different cultures of

origin, but residing in the same host country, also significantly impact their behaviors and corporate outcomes. Second, this chapter reconciles conflicting evidence regarding cultural dimensions and corporate sustainability performance by introducing two theoretically meaningful moderators: CEO newness and monetary incentives. Third, this paper illuminates a potential underlying mechanism—cultural heritage—through which managers can shape firms' sustainability preferences and performance. With respect to managerial implications, this paper emphasizes the importance of managers' risk preferences and tolerance for ambiguity in relation to corporate social and environmental performance. My moderating hypotheses propose practical mechanisms (e.g., redesigning CEO incentive plans or alleviating CEO career concerns) that firms can employ to mitigate the impact of CEO uncertainty avoidance index and assist organizations in achieving their corporate sustainability objectives.

The primary contribution of the third chapter is to the limited literature on the role of CSOs in firms' strategy and competitive actions. Specifically, this paper enhances our understanding of how CSOs can play a fundamental role in aligning social and business objectives, highlighting their influence on firms' broader strategic decisions while extending past research that predominantly focused on their impact on social performance. Furthermore, our findings contribute to the long-standing debate on whether strategy follows structure or vice versa, demonstrating that successfully managing interdependencies necessitates a dedicated managerial position equipped with both hierarchical authority and task-specific expertise. This chapter also has practical implications for companies, policymakers, and broader stakeholders. It underscores the importance of connecting specific executives to particular aspects of the firm. More importantly, firms seeking to integrate sustainability into their corporate strategy should not only appoint a CSO but also select individuals with experience navigating regulatory and policy environments. Policymakers and stakeholders should recognize the strategic importance of CSOs in ensuring that corporate philanthropy is not merely a function of goodwill but rather a managed tool capable of creating synergies between sustainability and business objectives.

I anticipate that these results will contribute to the literature on institutions and

organizations, upper echelons theory and strategic leadership, workplace diversity and inclusion, and corporate sustainability.

CONCLUSIÓN

Esta tesis doctoral busca ampliar la teoría de las altas esferas centrándose en los directores ejecutivos no prototípicos (por ejemplo, directoras ejecutivas, directores ejecutivos de minorías raciales y directores ejecutivos con orígenes culturales no estadounidenses) y en los nuevos ejecutivos de alto nivel (por ejemplo, directores de sostenibilidad). Además, pretende ofrecer nuevas perspectivas sobre estos ejecutivos en el contexto de una empresa. En esta sección, resumiré las principales contribuciones teóricas y las implicaciones de gestión de los tres capítulos de mi tesis doctoral.

El primer capítulo contribuye a la literatura sobre instituciones y organizaciones, los roles de las mujeres y las minorías raciales en el liderazgo y los problemas de las personas transgénero en el lugar de trabajo. Este capítulo señala que las directoras ejecutivas tienden a conformarse en exceso a las presiones institucionales en comparación con sus homólogos masculinos. Además, las organizaciones dirigidas por directoras ejecutivas pueden emular modelos de conducta negativos que hacen mínimos o nulos esfuerzos para promover iniciativas de diversidad cuando se enfrentan a un mayor escrutinio y a posibles sanciones. En este contexto, el capítulo hace hincapié en que la eficacia de las directoras ejecutivas y de las minorías raciales en la defensa de iniciativas de diversidad debe entenderse a través de la lente de cómo las presiones externas del entorno institucional configuran los esfuerzos de defensa de las directoras ejecutivas pertenecientes a minorías demográficas. Esta perspectiva ayuda a conciliar la relación, algo inconclusa, entre la condición de minoría demográfica de las directoras ejecutivas y el avance de las políticas de diversidad en el lugar de trabajo. Además, este documento subraya que las presiones externas a las que se enfrenta cada grupo minoritario son diferentes, lo que sugiere que puede ser problemático agrupar a las mujeres y a las minorías raciales en una sola categoría minoritaria. Por último, este capítulo contribuye a la literatura que examina los antecedentes de los programas de diversidad para grupos socialmente estigmatizados y marginados. Mis hallazgos también tienen implicaciones importantes para los directivos, ya que indican que los directores ejecutivos pertenecientes a minorías demográficas podrían aprovechar las presiones externas y las tensiones entre las partes interesadas para promover políticas de diversidad que se ajusten

a las estrategias y entornos operativos de sus empresas sin comprometer la legitimidad de sus puestos de liderazgo.

En el segundo capítulo presento tres contribuciones importantes. En primer lugar, este documento amplía la literatura existente sobre cómo las dimensiones culturales afectan a las preferencias y comportamientos gerenciales en los distintos países, destacando que los gerentes de diferentes culturas de origen, pero que residen en el mismo país anfitrión, también tienen un impacto significativo en sus comportamientos y resultados corporativos. En segundo lugar, este capítulo reconcilia las pruebas contradictorias sobre las dimensiones culturales y el rendimiento de la sostenibilidad empresarial mediante la introducción de dos moderadores teóricamente significativos: En tercer lugar, este documento arroja luz sobre un posible mecanismo subyacente (el patrimonio cultural) a través del cual los directivos pueden configurar las preferencias y el rendimiento de las empresas en materia de sostenibilidad. En cuanto a las implicaciones para los directivos, este documento hace hincapié en la importancia de las preferencias de riesgo de los directivos y la tolerancia a la ambigüedad en relación con el desempeño social y medioambiental de las empresas. Mis hipótesis moderadoras proponen mecanismos prácticos (por ejemplo, rediseñar los planes de incentivos para el director ejecutivo o aliviar las preocupaciones sobre su carrera) que las empresas pueden emplear para mitigar el impacto del índice de evitación de la incertidumbre del director ejecutivo y ayudar a las organizaciones a alcanzar sus objetivos de sostenibilidad corporativa.

La principal contribución del tercer capítulo es a la limitada literatura sobre el papel de los CSO en la estrategia y las acciones competitivas de las empresas. En concreto, este documento mejora nuestra comprensión de cómo los CSO pueden desempeñar un papel fundamental en la alineación de los objetivos sociales y empresariales, destacando su influencia en las decisiones estratégicas más amplias de las empresas, al tiempo que amplía las investigaciones anteriores que se centraban predominantemente en su impacto en el desempeño social. Además, nuestros hallazgos contribuyen al debate de larga data sobre si la estrategia sigue a la estructura o viceversa, demostrando que la gestión exitosa de las interdependencias requiere un puesto directivo dedicado, equipado con autoridad

jerárquica y experiencia específica en las tareas. Este capítulo también tiene implicaciones prácticas para las empresas, los responsables políticos y las partes interesadas en general. Subraya la importancia de conectar a ejecutivos específicos con aspectos particulares de la empresa. Más importante aún, las empresas que buscan integrar la sostenibilidad en su estrategia corporativa no solo deben nombrar un CSO, sino también seleccionar personas con experiencia en entornos regulatorios y políticos. Los responsables políticos y las partes interesadas deben reconocer la importancia estratégica de los CSO para garantizar que la filantropía corporativa no sea simplemente una función de buena voluntad, sino una herramienta gestionada capaz de crear sinergias entre la sostenibilidad y los objetivos empresariales.

Preveo que estos resultados contribuirán a la literatura sobre instituciones y organizaciones, teoría de las altas esferas y liderazgo estratégico, diversidad e inclusión en el lugar de trabajo y sostenibilidad corporativa.